Third International

MULTIDISCIPLINARY CONFERENCE

Organized by R&D and Mathematics Department

FAZAIA BILQUIS COLLEGE OF EDUCATION FOR WOMEN PAF BASE NUR KHAN, RAWALPINDI

INTEGRATING

INNOVATION & SUSTAINABILITY

Across Disciplines

BOOK OF ABSTRACTS

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INTRODUCTION

Fazaia Bilquis College of Education for Women, established in 1984 as Mujahida Academy, has evolved into a leading institution for women's education and empowerment, originally serving the Pakistan Air Force Women's Association (PAFWA). Since aligning with Air University in 2003, FBCOE (W) has been recognized for its outstanding teaching standards and exemplary governance, significantly contributing to the community by producing well-trained and competent professionals.

The college offers a diverse range of academic programs, including BS (Hons.) degrees in English, Mathematics, Psychology, Computer Science, Business Administration, and Education, along with a Diploma in the Montessori Method of Teaching and Short Orientation Courses. FBCOE (W) is dedicated to fostering a passion for learning and empowering women to become future leaders. In this spirit, we proudly host a conference that explores the critical intersections of innovative practices and sustainable development across disciplines, fostering collaboration and inspiring new solutions for a resilient future.

The Third International Multidisciplinary Conference entitled, ***Integrating Innovation and Sustainability Across Disciplines*****,** explores the critical intersections of innovative practices and sustainable development across disciplines. This conference aims to foster collaboration among scholars, practitioners, and policymakers, addressing how innovative solutions can drive sustainable practices in various sectors. By sharing research and best practices, we hope to inspire new approaches that contribute to a resilient and sustainable future for our communities.

MESSAGE FROM THE PRESIDENT
PAKISTAN AIR FORCE WOMEN'S ASSOCIATION (PAFWA)

"Our destiny is not written in the stars, but in our own hands." – William Shakespeare

The extraordinary strides made by Fazaia Bilquis College of Education for Women stand as a shining example of the unwavering commitment and diligence of its Management and Faculty in upholding the highest standards of education. Today, the College is a symbol of academic brilliance, recognized for its vital role in nurturing enlightened, capable women who shape the future. In an era defined by the rapid currents of globalization, technological advancement, and skill acquisition, we shoulder the profound responsibility of preparing our students to face the challenges ahead with resilience, dignity, and purpose.

The third International Multidisciplinary Conference, centered on Integrating Innovation and Sustainability across Disciplines, offers a momentous occasion to explore the vast horizons of knowledge and research. In these times, the fusion of innovation with sustainability is not merely desirable but essential for progress. This gathering provides an invaluable stage for young minds to engage in rigorous discourse, fostering the interdisciplinary thinking that is crucial to tackling the complexities of our world. The College, in its quest to offer both scholastic excellence and a rich array of co-curricular opportunities, ensures that students emerge not just as learners but as leaders, ready to contribute meaningfully to society.

I express my heartfelt gratitude to the organizers and coordinators of this esteemed event. Their vision and dedication have brought this conference to life, creating a space for intellectual growth and collaboration. As we continue to arm our students with the knowledge, wisdom, and ethical grounding necessary for the modern age, I am certain that the College will ascend to even greater heights of distinction.

May this conference ignite the flame of curiosity and inspire every participant to embark on a journey of innovation, always mindful of the sustainable path we must tread for the betterment of the world.

MESSAGE FROM THE PRINCIPAL

"Education is the most potent catalyst for transformation." – Aristotle

Our institution fosters an environment where students are inspired to explore their potential and pursue excellence. Since its establishment in 1984, Fazaia Bilquis College of Education for Women has grown into a beacon of educational distinction, producing enlightened and capable professionals who have made significant contributions to society. The College takes pride in empowering women through quality education and skillful training, cultivating individuals who excel both academically and in their broader roles in the community.

With the third International Multidisciplinary Conference, themed *Integrating Innovation and Sustainability Across Disciplin*es, we reinforce our commitment to research and innovation. This conference provides young scholars a vital platform for engaging in critical discourse, knowledge exchange and facilitates collaboration that drives sustainable solutions. As global challenges intensify, the need for interdisciplinary approaches and innovative thinking is crucial. The College remains committed to equipping students with the skills and insights needed to address these issues.

Our focus on student-centered growth continues to be the cornerstone of our philosophy. By offering initiatives like this conference, we aim to nurture the talents of each individual and prepare them for the complexities of a rapidly changing world. This endeavor is made possible by the tireless dedication of our Faculty and Management, whose vision ensures the success of such initiatives.

I extend my heartfelt congratulations to the editorial board and organizing committee for their efforts in making this event a success. To all participating scholars and students, I offer a warm welcome and my best wishes for an enriching experience as we strive toward new heights in research and academic excellence.

3RD IMC GUESTS PROFILE

Name	Organization	Designation	
Keynote Speakers			
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Prof. Dr. Nilüfer Pembecioğlu	Istanbul University, Turkey	Professor Department of Cinema	
Dr. Yasir Ahmad	National University of Science & Technology, Islamabad, Pakistan	Head of Engineering Management Department	
Dr. Khushbakht Hina	National University of Modern Languages Islamabad, Pakistan	Associate Professor and HOD Education Department	
Dr. Hayam Qayyoum	Bahria University - Islamabad Campus, Pakistan	Assistant professor Cluster head BUIC	
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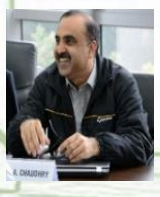
Dr. Ajmal Chaudhary	**Allama Iqbal Open University, Islamabad, Pakistan**	**Associate Professor**	

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Abstract 01: doi:01/3IMC24/FBCOE(W)

Fractional Type Sub-Linear Operators on Homogeneous variables and Exponents Herz-Morrey-Hardy Spaces

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In harmonic analysis, studies of inequalities of sublinear operators in various function spaces have a very important place. Variable exponent Morrey-type spaces and the examination of the boundedness of such operators on these spaces have an important place in harmonic analysis and have become an interesting field. In this work, we consider the boundedness of fractional-type sublinear operators on homogeneous variable exponent Herz-Morrey-Hardy spaces under some conditions.

Keywords: harmonic analysis, sublinear operators, variable exponent Morrey spaces, boundedness, Herz-Morrey-Hardy spaces, fractional-type operators

Abstract 02: doi:02/3IMC24/FBCOE(W)

On Seeing – Perceiving and Believing: Crossing the Bridge Between The Vision and Reality

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It's debatable to what extent reality influences information, innovation, and knowledge. People's perspectives and how they view things will rely on how much their location, culture, and belief systems influence them in addition to how well they can see and interpret the facts. In the twenty-first century, in particular, artificial intelligence applications, digital media and media manipulations have given humans a more complex understanding of reality. However, the majority of the issues arise from their tendency to rely more on the long-standing attributions of their culture or belief systems and less on the conventional method of challenging reality. The purpose of this paper is to offer some examples of how we could progress developing innovative questioning paths regarding sustainability across disciplines.

Keywords: reality, information, innovation, belief systems, artificial intelligence, sustainability

Abstract 03: doi:03/3IMC24/FBCOE(W)

Language and Culture: A Diachronic Study of Pakistani Dramas

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Sociolinguistics, a field pioneered by William Labov in the 1960s, explores the intricate relationship between language and society, examining how social factors—such as class, gender, and ethnicity—influence language use and communication. This study delves into the dynamic nature of language within the context of Pakistani television dramas, recognizing that language is not static but evolves in response to changing social and cultural landscapes. Pakistani dramas hold a significant position in shaping societal perceptions and cultural understanding; thus, it is crucial to understand how language use within these dramas has evolved over time and what sociocultural implications these changes entail. This research aims to provide a critical analysis of language evolution in Pakistani dramas, specifically examining how language use reflects shifting societal norms and cultural identities. The central question addressed is: "How has language use in Pakistani dramas changed over time, and what are the sociocultural implications of these changes?" To answer this question, the study employs a qualitative method to conduct a comparative analysis of two prominent Pakistani dramas: Tanhaiyaan (1990) and Ishq Jalebi (2022). Using transcripts of dialogues from these dramas, the analysis reveals changes in the sociolinguistic features of language, reflecting the evolving socio-cultural landscape of Pakistan over the past three decades. The findings demonstrate that the language used in these dramas becomes a means of constructing, negotiating, and expressing evolving cultural identities and social hierarchies, while also reflecting broader temporal transformations in Pakistani society. This study contributes to a deeper understanding of how language, as a dynamic cultural artifact, responds to changing societal landscapes. Overall, it sheds light on the evolving nature of Pakistani television's engagement with the complexities of language and culture. The findings have implications for scholars of sociolinguistics, media studies, and Pakistani culture.

Keywords: Sociolinguistics, language, society, Pakistani culture, societal perceptions, cultural identity.

Abstract 04: doi:04/3IMC24/FBCOE(W)

Code-Switching And Mixing as a Cognitive Load or a Tool of Fluency

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This research investigates the intricate relationship between code-switching, code-mixing, and cognitive load in language processing, focusing on their roles as strategies employed by individuals to enhance fluency in bilingual or multilingual communication. The study explores the cognitive demands imposed by the dynamic interplay of languages within the same discourse and evaluates the extent to which these linguistic phenomena contribute to or alleviate cognitive load during language processing. Utilizing a mixed-methods approach that incorporates qualitative analysis of language use patterns and quantitative measures of cognitive load, the research aims to unravel the cognitive intricacies associated with code-switching and code-mixing. Surveys, interviews, and personal observations by the researcher are treated as primary data, while three literary pieces (Burnt Shadows, The Diary of a Social Butterfly, and Ysrael) serve as secondary data. By combining quantitative surveys for broad statistical evidence with qualitative interviews and text analysis for nuanced exploration, this approach enables triangulation, enhancing the reliability and validity of the research. The findings reveal that unconscious use of code-switching and code-mixing does not impose a cognitive burden, while intentional use varies in its impact. The analysis highlights that fluency remains a primary driver, with these phenomena predominantly occurring unintentionally. The findings have implications for understanding how individuals navigate the complexity of bilingual or multilingual interactions, shedding light on whether these linguistic strategies act as cognitive facilitators or present additional processing challenges. This research may help explain why people struggle and often stutter during conversation. Insights derived from this study may inform language education practices and contribute to a deeper understanding of the cognitive dynamics underlying fluent communication in diverse linguistic contexts.

Keywords: Code-switching, code-mixing, cognitive load, bilingual communication, fluency, language processing.

Abstract 05: doi:05/3IMC24/FBCOE(W)

Analysis of Foucault's Concept of Power and Language in a Doll's House & Arms and The Man

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This research paper examines the intersection of language and power in Henrik Ibsen's A Doll's House through the lens of Michel Foucault's theories on power and discourse. Utilizing a qualitative methodology with close reading as the primary analytical approach, the study delves into how characters in Ibsen's play employ language to exert dominance or resist societal constraints. By meticulously analyzing dialogue and narrative techniques, the paper reveals how power dynamics are discursively maintained and challenged within the context of 19th-century patriarchal norms. Key dialogues from A Doll's House demonstrate how Torvald Helmer's patronizing language reinforces his control over Nora, reducing her to a submissive role within their marriage. In contrast, Nora's evolving use of language illustrates her growing awareness and resistance against these societal expectations, culminating in her decision to leave her domestic life in pursuit of self-discovery. Through a comparative analysis with George Bernard Shaw's Arms and the Man, the research underscores the role of language in shaping and resisting power structures, ultimately highlighting the potential for individual autonomy and societal critique embedded in literary discourse. For instance, characters like Raina in Arms and the Man initially adhere to romanticized ideals of war and heroism, only to later challenge these views through pragmatic dialogue with Captain Bluntschli. These insights provide a deeper understanding of the role of language in both upholding and challenging power structures, offering valuable perspectives for analyzing literary discourse and its impact on social norms.

Keywords: Foucault, power and resistance, language and power, A Doll's House, Arms and the Man.

Abstract 06: doi:06/3IMC24/FBCOE(W)

Collaborative Teaching: Bringing Language Teaching to the English Content Classroom

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The present study explores collaborative teaching and its incorporation as a remedial technique in an English content course at the Master's level. This research arises from the desire to merge grammar and content, addressing the significant issues faced by students whose performance is below average by the time they reach tertiary education. Using action research as its methodology and drawing on W. W. Murawski's perspective on co-teaching, adapted for a non-inclusive classroom, the research examines how co-teachers' application of this technique can enhance their teaching experience and improve students' understanding of content while simultaneously strengthening their grasp of language concepts. The remedial classroom typically accommodates 8-10 students, which was ideal for the Master's class with only ten students enrolled that semester. The study was confined to seven co-taught sessions due to the co-teachers' other administrative responsibilities. The current study analyzes reflections from both co-teachers after each session in light of their prior experiences. Findings suggest that co-teaching in an English content course at the Master's level can effectively serve as a remedial teaching technique to improve learners' weak language skills and enrich the teaching experience for educators.

Keywords: Collaboration, Co-teaching, Higher Education, Remedial Teaching, Teaching English as a Second Language.

Abstract 07: doi:07/3IMC24/FBCOE(W)

Critical Appreciation of the Main Character in 'The Boy, the Mole, the Fox and the Horse': A Transitivity Analysis

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The diverse circumstances and nature of human interactions enrich life experiences and reveal various aspects of an individual. This study investigates the main character in The Boy, the Mole, the Fox, and the Horse, who engages in profound conversations with other characters. The text provides insight into genuine human emotion and the reality of life's journey. By applying transitivity analysis from Systemic Functional Grammar, the study reveals that 'the Boy' is primarily engaged in mental processes, reflecting his innermost thoughts, emotions, and desires. Each character he interacts with represents a different facet of his identity. Moreover, the selection of characters for dialogue and the nature of those interactions serve as windows into his search for reassurance and stability, shaped by his life circumstances and emotional landscape. Overall, the study demonstrates that the author's linguistic choices in depicting the Boy's journey highlight his intricate character development, revealing the complexity and richness of his persona as well as his internal struggle in navigating life, relationships, and, importantly, his self-worth.

Keywords: Critical appreciation, systemic functional grammar, transitivity analysis, character construction.

Abstract 08: doi:08/3IMC24/FBCOE(W)

Exploration of Magical Realism in "The Very Old Man with Enormous Wings"

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Magical realism is a literary style that combines realistic descriptions of everyday life with magical or fantastical elements, weaving together the ordinary and the mysterious. This genre invites readers to step into a realm of enchantment, revealing hidden wonders within the everyday world. By fusing the familiar with the unknown, magical realism crafts a unique narrative that is both mesmerizing and thought-provoking. Its popularity has particularly soared in Latin America. This study examines the extent to which readers engage with Gabriel Garcia Marquez's narrative The Very Old Man with Enormous Wings, facilitated by elements of magical realism that blur the boundaries between reality and the unknown. Such elements prompt a self-reflective examination of readers' perceptions and the limits of their imagination. The researcher employs thematic coding for analysis, identifying and categorizing these elements to provide a deeper understanding of how magical realism operates in the narrative. Wendy B. Faris's seminal work, Ordinary Enchantments: Magical Realism and the Remystification of Narrative (2004), serves as the basis for this coding. It explores the concept of magical realism in literature, demonstrating how it seamlessly blends realistic descriptions with fantastical elements. Four key postulates are selected for analysis: Metamorphosis and The Phenomenal World (where the ordinary becomes extraordinary), Unsettling Doubts (blurring lines between reality and fantasy), Merging Realms (combining everyday and magical worlds), and Disruptions (challenging traditional notions of time, space, and identity). The study reveals how magical realism transforms narrative, creating a unique reading experience that not only enchants but also encourages readers to reconsider their understanding of reality. This exploration fosters a richer appreciation for this captivating genre and its operation within literary narratives.

Keywords: Fantasy, Magical realism, Metamorphosis, Reality, Transformation.

Abstract 09: doi:09/3IMC24/FBCOE(W)

Analyzing Language Usage of Pakistani Celebrities: Veterans vs. Overnight Sensations

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In the realm of the showbiz industry, celebrities occupy a unique position as influencers and role models. Their words significantly impact society and shape public opinion. The choice of language in interviews is not merely personal expression; it can profoundly affect their audience. This research paper explores the language choices made by young and adult Pakistani celebrities in interview settings. By analyzing their diction, the study seeks to illuminate factors such as age, audience, and social context that influence their linguistic styles. The research is restricted to excerpts from interviews with five celebrities featured on Fuchsia Magazine, a YouTube platform. It draws on data from a selection of interviews conducted with both young and adult celebrities across various media platforms. Through qualitative analysis of word choice, sentence structure, and register, the paper identifies patterns and differences in communication styles between the two groups. The theoretical framework used is Discourse Analysis Beyond Speech Events by Wortham and Reyes (2015), which encourages analysts to look beyond fixed speech events and consider the development of discourses over time.The findings contribute to a broader understanding of Pakistan's evolving linguistic landscape and the role of celebrities in shaping language trends. Veteran celebrities, established figures with sustained careers, tend to use a more formal style compared to young or overnight sensations. Additionally, veteran celebrities reflect a higher level of professionalism through their word choices.

Keywords: Pakistani celebrities, diction analysis, age influence, linguistic styles, evolving linguistic landscape, celebrity language trends.

Abstract 10: doi:10/3IMC24/FBCOE(W)

Perception of English Code-Mixing in Pakistani Comedy Shows Amongst Audiences

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This study explores how audiences perceive English code-mixing in Pakistani comedy shows and the impact it has on their engagement, comprehension, and enjoyment. Code-mixing in comedy is innovative as it blends languages creatively to engage a diverse audience. It is also sustainable, as it keeps content relevant and engaging over time. Given Pakistan's multilingual society, comedians often mix English with Urdu and regional languages to entertain a wide range of viewers. However, the perception of code-mixing among different demographic groups remains an under-researched area. This study aims to fill this gap by adopting a quantitative approach, utilizing a structured questionnaire to gather data from diverse demographic groups. The data was analyzed using SPSS. The results reveal three key findings: Firstly, 80% of younger and more educated viewers find code-mixing modern and relatable, enhancing the humor's engagement and relevance. Secondly, 65% of older or less proficient viewers feel alienated, as the use of English creates a barrier that diminishes their understanding of the jokes. Lastly, 40% of participants view English as a symbol of higher social status, with mixed reactions—some find it sophisticated, while others believe it creates social divisions. The study concludes that while English code-mixing can enhance humor for some, it may alienate others. These findings offer valuable insights for comedians and content creators, helping them tailor their content to appeal to various audience groups. For instance, comedians could adjust their use of code-mixing to avoid isolating older or less proficient viewers, making their content more inclusive. Moreover, this research provides guidance on how language in comedy influences perceptions of social status, enabling creators to engage diverse audiences while promoting inclusivity.

Keywords: English Code-Mixing, Audience, Comedy, Perception, Inclusivity, Language

Abstract 11: doi:11/3IMC24/FBCOE(W)

Unraveling Eco-Feminist Voices: A Transitivity Analysis of "The Grass is Really Like Me"

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This research analyzes the poem "The Grass is Really Like Me" by Kishwar Naheed, translated by Rukhsana Ahmed, through the framework of Systemic Functional Linguistics (SFL). The poem explores the relationship between women and nature, emphasizing their shared struggles and resistance to oppression. Although the poem contains rich eco-feminist themes, there is a lack of linguistic analysis that delves into how these themes are conveyed through specific linguistic choices. This study addresses this gap by employing M.A.K. Halliday's transitivity analysis, introduced in 2004, as both the analytical framework and tool for this research. The objective is to examine how eco-feminist themes manifest through transitivity patterns and to identify which process types dominate the poem at the clause level. The findings indicate that material processes are predominantly used, reflecting the physical and social constraints experienced by both women and nature. Furthermore, the analysis reveals a profound parallel between women and grass, both subjected to oppression yet demonstrating resilience. The poem's central theme is the power dynamics between men and nature/women, with the poet advocating for a more equitable and just world. This research contributes to the growing body of eco-feminist discourse analysis by highlighting the effectiveness of transitivity analysis in uncovering hidden meanings within literary texts. The study also offers a methodological approach that can be employed in future research. Additionally, the findings may inform eco-feminist literary criticism and enhance the appreciation of the poem's deeper significance.

Keywords: Systemic Functional Linguistics, Transitivity Analysis, Ecofeminism, Linguistic Choices, Power Dynamics, Resilience

Abstract 12: doi:12/3IMC24/FBCOE(W)

Unveiling Gender Dynamics: A Feminist Examination of Isabel Allende's "Two Words"

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This research, titled Unveiling Gender Dynamics: A Feminist Examination of Isabel Allende's "Two Words," offers an in-depth exploration of the feminist themes present in Isabel Allende's short story "Two Words". The study aims to analyze how the story mirrors complex gender dynamics and contributes to the broader framework of feminist literary criticism. The primary objective is to address several pivotal questions: What feminist elements are encapsulated in the character of Belisa Crepusculario? How does the narrative confront and challenge traditional gender roles and entrenched patriarchal structures? Furthermore, why are economic independence and the development of self-identity crucial to the portrayal of female empowerment in this story? By utilizing a feminist theoretical lens, this research investigates the intricate representation of gender roles, inherent sexism, and the broader quest for gender equality within the text. The qualitative analysis centers on significant aspects such as identity formation, the significance of economic independence for women, power imbalances between genders, and the resilience demonstrated by the female protagonist. These components underscore critical feminist themes and highlight how Two Words dismantles societal expectations of women, presenting an empowered female figure who resists male domination and reclaims her narrative. The paper reveals how these thematic elements reflect the broader struggle for female autonomy and strength, emphasizing the story as a poignant example of female agency. Ultimately, this research contributes to the ongoing scholarly conversation surrounding gender dynamics, drawing attention to the ways in which literary works can be powerful tools for advocating gender equality, questioning patriarchal structures, and promoting feminist ideals. Allende's Two Words serves as an essential text in this discourse, illustrating the resilience and strength inherent in the fight for female empowerment.

Keywords: Feminism, Gender Equality, Traditional Gender Roles, Sexism, Patriarchy, Female Empowerment

Abstract 13: doi:13/3IMC24/FBCOE(W)

Unveiling Orientalism in Pakistani English Fiction

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This paper examines the representation of Orientalism in Pakistani English fiction, focusing on Mohsin Hamid's novel 'The Reluctant Fundamentalist' and Hanif Kureishi's drama 'My Son the Fanatic.' Using a qualitative, descriptive approach, the study analyzes how these works reflect and challenge dominant Orientalist narratives. The findings reveal that Orientalism perpetuates harmful stereotypes and power imbalances, reinforcing cultural misconceptions and hegemonic narratives. The struggles faced by the characters as they navigate cultural tensions underscore the human cost of Orientalism, particularly in relation to issues of identity, belonging, and cultural authenticity. This research highlights the significance of recognizing and addressing Orientalism's pervasive influence in shaping our understanding of non-Western cultures. It also emphasizes literature's potential to challenge dominant narratives and promote intercultural understanding.

Keywords: Orientalism, Pakistani Fiction, Cultural Misconceptions, Identity, Power Imbalances, Intercultural Understanding

Abstract 14: doi:14/3IMC24/FBCOE(W)

Interface Between Humans and Nature in Margaret Atwood's 'Oryx and Crake'

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Fiction writers have long observed and recorded the effects of climatic changes and environmental influences on human life in various literary works. Literary fiction serves as a valuable source of education on the dangers of human encroachment on nature and the importance of ecosystem preservation. This research analyzes Margaret Atwood's novel 'Oryx and Crake' (2003) through an ecocritical lens, highlighting its potential to integrate climate education into curricula, develop climate-friendly policies, and address challenges related to climate change. The study explores the interactions between characters, their environment, and the narrative before and after a man-made apocalypse disrupts the ecosystem. By employing an interdisciplinary approach, the research applies Stephen R. Kellert's typology of human-nature relationships, which includes utilitarian, aesthetic, ecologistic-scientific, humanistic, moralistic, dominionistic, negativistic, symbolic, and naturalistic interactions. The findings reveal that characters are both shaped by their environment and impact it through their thoughts and actions. Among these interrelationships, the symbolic interaction with nature emerges as the most significant, serving as the foundation for various other types of interactions in both the dystopian and post-human utopian worlds depicted in the narrative. Ultimately, the study showcases the intersection of literature and ecology, offering an ecocritical analysis of 'Oryx and Crake' and emphasizing the value of fiction in fostering environmental awareness.

Keywords: Ecocriticism, Ecosystem, Ecology, Climate Change, Atwood, Fiction

Abstract 15: doi:15/3IMC24/FBCOE(W)

Unveiling the Theme of Religious Extremism in 'My Son the Fanatic' by Hanif Kureishi

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This research paper explores the theme of religious extremism in Hanif Kureishi's 'My Son the Fanatic.' Through a detailed analysis of the text, it examines the protagonist Ali's journey toward radicalization and its impact on his familial relationships. The study investigates the factors contributing to Ali's embrace of fundamentalism, focusing on identity struggles and societal pressures. The research addresses key questions: How does Hanif Kureishi depict religious extremism in 'My Son the Fanatic', and what factors lead to Ali's radicalization? Employing a qualitative methodology and textual analysis, the study is grounded in Social Identity Theory. By uncovering the complexities surrounding religious extremism in the narrative, this research offers insights into the challenges of promoting social cohesion in multicultural societies. The findings emphasize the importance of empathy, dialogue, and understanding in addressing the root causes of radicalization, aiming to foster greater harmony within diverse communities.

Keywords: Religious Extremism, Fundamentalism, Textual Analysis, Social Identity, Multicultural Societies

Abstract 16: doi:16/3IMC24/FBCOE(W)

Female Portrayal in Pakistani Punjabi Movies: Comparative Case Study of 'Maula Jatt 1' and 'The Legend of Maula Jatt'

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The film industry is one of the most influential instruments of propaganda today. This study aims to investigate how Pakistani movies depict Pakistani culture, with a particular focus on the misrepresentation of women in Pakistani Punjabi films. Specifically, it examines the various forms of language used to express female characters' descriptions and the justification for their actions and beliefs. This study analyzes the Punjabi movies *Maula Jatt 1* and *The Legend of Maula Jatt* through the lens of Judith Baxter's theory of domination. The themes in both movies are sensitive, as they exploit women's positions in society. The researchers employed qualitative techniques for analysis, watching both films and examining how the lexical choices of female characters misrepresent them in society. Data were collected from both online sources and cinema viewings. This study analyzed the lexical choices and visuals from both movies to interpret how they serve as tools for the indoctrination of the younger generation. The subjects of these films are undoubtedly appealing to a male-dominated society, which seeks to enforce the portrayals of women as depicted in media. These movies raise significant questions regarding the actual position and image of women in society. The findings reveal that the directors and producers of the selected films have strongly misrepresented women. In our society, women are not treated equally, not only by men but also by other women. The examination of the films indicates that the ideology of dominance and patriarchal issues underpin the scripts. This research aims to highlight the true image of women in society and demonstrate how cultural norms in Punjab have evolved over time. The exaggerated and overly restricted portrayal of women does not leave a positive impact on viewers. The theory regarding the language of female leadership advocates not only for legal rights for women but also for equal and respectful treatment. Thus, this study will explain how female characters are exploited by producers and male characters in both films.

Keywords: Cinema, Patriarchy, Leadership, Movies, Ideology

Abstract 17: doi:17/3IMC24/FBCOE(W)

Information Retention in Short Form Video Content on Social Media

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Social media is a dynamic medium that continuously alters the way content is presented and consumed. Short-form videos on platforms like TikTok and Instagram have significantly influenced audience viewing habits. These videos serve as tools for human-machine interaction, satisfying user gratifications related to interpersonal attachment, content personalization, and entertainment needs; however, they also contribute to social anxiety, isolation, and limited information retention. The surge in the use of short-form video content raises concerns about users' ability to retain information effectively, as these videos can create an illusion of efficient time usage, prompting questions about their impact on information retention. This study aims to assess the effectiveness of information retention from short-form video content and identify the factors affecting retention rates. The primary question addressed is: "How effectively do users retain information from short-form videos on social media?" A quantitative research approach was employed to measure retention and the factors influencing it, utilizing a questionnaire to collect data from a sample of active social media users (Instagram, TikTok, YouTube Shorts). The study identified that engaging, concise videos significantly enhance users' retention abilities, and that user demographics play a crucial role in determining information retention rates. This research provides valuable insights for content creators on social media, helping them understand the changing dynamics and adapt their video formats accordingly. The study's limitations include the focus on specific demographics, which may restrict the generalizability of the results, while content genre may also limit the applicability of the findings.

Keywords: Social Media, Information Retention, Short-Form Videos, Human-Machine Interaction

Abstract 18: doi:18/3IMC24/FBCOE(W)

Visual Podcasting in the Digital Era: Unleashing the Power of Sound and Immersive Communication

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This research investigates the power of sound and the rapidly emerging phenomenon of podcasts in today's digital media landscape, which boasts a substantial mass audience. The study focuses on the usage, significance, and motivations behind podcasting, as well as the elements that contribute to its importance. Podcasts represent a new medium for delivering messages through audio, while also incorporating visual elements. The present research delves into the motives of podcast creators utilizing video podcasting and examines how this format is transforming audio storytelling through immersive experiences. Visual podcasting enriches not only storytelling and talk shows but also enhances the overall format and style. Today, podcasts encompass a variety of formats, including interviews, focus group discussions, and monologues, addressing diverse topics such as daily life, politics, technology, motivational themes, and women's issues. Each instance of communication within podcasts carries meaning, driven by the motives and objectives of the creators. This study is grounded in communication theory, utilizing three approaches alongside Adaptive Structuration Theory to assess podcasting. To explore the underlying purposes and motivations of podcast creators, a purposive sampling technique was employed, conducting interviews with podcasters across various categories. The results were analyzed using NVivo, leading to the identification of key themes and codes. Findings indicate that visual appeal plays a significant role in attracting audiences, enhancing engagement through its uniqueness and innovative format. As video podcasting continues to gain traction, creators are increasingly exploring immersive formats, positioning visual podcasting as a promising area for future exploration. The present research suggests that visual podcasting represents a new frontier for producers, with a bright future owing to its innovative and immersive nature.

Keywords: Podcasts, Visual Podcasting, Immersive Podcasting, Motivations, Interviews

Abstract 19: doi:19/3IMC24/FBCOE(W)

A Psycho-Geographic Study of Social Space in Singh's 'Delhi'

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This paper focuses on the spatial shift and dialectical evolution of Delhi from old to new, specifically from pre-1947 to post-1947, influenced by psychological, social, political, cultural, and religious forces. These forces have transformed Delhi from an ancient city into a postmodern metropolis. The intermingling and interaction of local colonized and foreign colonizing ideologies have significantly impacted the psychology of the people within this global capitalist city space. The spatial and temporal shifts represented in Singh's 'Delhi' create social and psychological conflicts, highlighting an invisible and indivisible rift between the city and its dwellers, which contributes to the formation of an agglomerative urban culture. This cultural shift has led to the emergence of new multicultural imaginaries. To trace the heterotopic shift and dialectical evolution of the city space, this article employs the theoretical insights of Foucault, Soja, and Lefebvre's triadic model—perceived space, conceived space, and lived space. This framework helps analyze how literature and society shape the spatial experiences of today's metropolitan dwellers. The spatial politics and poetics identified in this research have a profound and lasting impact on the psychology of people in a global capitalist landscape.

Keywords: Social Space, Spatial Triad, Dialectical Evolution

Abstract 20: doi:20/3IMC24/FBCOE(W)

New Sincerity: The Depiction of Hope and Resilience in Mary Oliver's Poems

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New Sincerity, often referred to as Post-Postmodernism, has emerged as a significant topic of interest in contemporary literature. Pioneered by David Foster Wallace in the 1990s, this movement reacts against the cynical, ironic, and fragmented narratives characteristic of postmodernist literature. Building on Wallace's theoretical framework, this study explores how the themes of connection, hope, and resilience are depicted in the works of renowned American poet Mary Oliver. For this analysis, two of Oliver's poems—"Why I Wake Early?" (2004) and "I Worried" (2010)—have been selected through purposive sampling. Employing a qualitative research paradigm, the researcher utilizes thematic coding to analyze the texts. A detailed examination reveals that both selected poems align with the philosophy of New Sincerity by reestablishing human connections with themselves and nature. The findings suggest that Oliver's work exemplifies the core tenets of New Sincerity, offering a profound sense of hope and resilience amid the complexities of contemporary life.

Keywords: New Sincerity, Post-Postmodernism, Hope, Resilience, Mary Oliver

Abstract 21: doi:21/3IMC24/FBCOE(W)

A Study on Artificial Intelligence and Project Management

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This study investigates the impact of artificial intelligence (AI) initiatives on the performance of project-based organizations in Pakistan. It aims to understand how AI efforts influence critical success criteria, including stakeholder relationships, profitability, and organizational reputation. To conduct this qualitative investigation, a closed-ended questionnaire was adapted from previously published research to collect primary data. The target population consists of individuals involved in project-based organizations that actively engage in AI initiatives. Using a purposive sampling technique, respondents—including employees, managers, and other stakeholders—were selected for the study. The collected data was analyzed to identify patterns and relationships between AI projects and overall project success. The results reveal a positive correlation between organizational success and AI initiatives. AI activities significantly enhance stakeholder relationships, reputation, and profitability. Moreover, these initiatives are shown to increase employee satisfaction, financial performance, and stakeholder trust. The findings underscore the applicability of AI in the Pakistani corporate sector and demonstrate its positive influence on various organizational success metrics. The insights gleaned from this study are valuable for corporate decision-makers in Pakistan, indicating that well-implemented AI initiatives can significantly improve both financial performance and stakeholder relationships. Investments in AI can yield substantial benefits for businesses in terms of profitability and organizational standing.

Keywords: Artificial Intelligence, Project Management, Stakeholder Relationships, Organizational Success, Employee Satisfaction, Profitability

Abstract 22: doi:22/3IMC24/FBCOE(W)

Employees' Perception on CRM Practices and Impact on Customer Satisfaction and Customer Loyalty: A Perception from Pakistan

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Customer Relationship Management (CRM) is a strategy aimed at fostering strong relationships with customers to meet their needs, and it has become increasingly crucial for banks to thrive in a competitive environment. This study investigates the complex relationship between employees' perceptions of CRM strategies and their subsequent impact on customer loyalty and satisfaction. Understanding employees' perspectives and their interactions with clients is essential to explore the influence of CRM strategies, including green CRM, on customer engagement and ecological sustainability. Data was collected through a random distribution of questionnaires to fifty bank clients and staff. The collected data were analyzed using the SPSS tool, which revealed significant connections between CRM practices and customer satisfaction and loyalty. The findings indicate that satisfied customers in the banking sector are more likely to exhibit loyalty and commitment. This research underscores the importance of effective CRM practices in enhancing customer experiences and fostering loyalty within the banking industry.

Keywords: CRM Practices, Customer Loyalty, Customer Satisfaction, Green Practices, E-CRM, Artificial Intelligence (AI)

Abstract 23: doi:23/3IMC24/FBCOE(W)

Impact of Green Procurement and Its Effect on Project Success

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As concerns about climate change, resource depletion, and environmental degradation continue to mount, businesses are increasingly adopting green procurement strategies to mitigate their environmental impact and enhance project outcomes. This study examines the impact of green procurement on project success, focusing on the moderating effects of stakeholder participation and leadership commitment, as well as the mediating role of environmental performance. Utilizing a qualitative research methodology, the study employs a survey conducted with 50–100 respondents from various industries to explore the connections between environmental performance, project success, and green procurement practices. The anticipated findings aim to contribute to the development of a theoretical framework for understanding how green procurement influences project success and provide actionable recommendations for businesses. By emphasizing the importance of sustainable practices, this research seeks to highlight the role of green procurement in driving project success in today's corporate landscape.

Keywords: Corporate Environmental Ethics, Environmental Training, Resource-Based View, Top Management Commitment.

Abstract 24: doi:24/3IMC24/FBCOE(W)

Impact of Shared Leadership on Project Success

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Shared leadership, a collaborative approach where leadership responsibilities are distributed among team members, has gained attention for its potential to enhance project success. This paper reviews the existing literature on shared leadership and its effects on project outcomes. The findings indicate that shared leadership positively influences project success by promoting distributed expertise, enhancing innovation and problem-solving, improving communication, increasing motivation and engagement, fostering adaptability, and expediting decision-making. Despite its significance, the importance of shared leadership behavior in a project setting has not received adequate attention both theoretically and empirically. This research specifically investigates the impact of shared leadership on project success in the context of IT projects. Furthermore, the study explores the moderating roles of team confidence, cohesion, and knowledge sharing. Using PROCESS for data analysis, the study examines a conditional process model involving 236 team members engaged in IT projects. The results reveal that team cohesiveness and knowledge sharing, along with direct leadership, significantly enhance project success. Slope analysis demonstrates a relationship between team trust, cohesion, and information sharing, which positively impacts project success. The study draws inferences from these findings and discusses their practical implications for project management.

Keywords: Shared Leadership, Project Success, IT Projects, Team Cohesion, Knowledge Sharing.

Abstract 25: doi:25/3IMC24/FBCOE(W)

Shared Leadership, Knowledge Sharing, and Project Success: Mediated Mechanism and Interacting Effect

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This study investigates the impact of shared leadership on project success, highlighting the mediating role of knowledge sharing and the moderating role of sustainable measurements. In today's era, leaders influence groups to achieve common goals, and addressing sustainable environments poses significant challenges for diverse projects. To ensure theoretical generalizability, this study employed a questionnaire-based analysis, gathering data from 200 respondents through convenience sampling techniques. The results indicate that shared leadership is positively and significantly associated with project success. Knowledge sharing serves as a mediator in the relationship between shared leadership and project success, while it also moderates this relationship in the context of sustainable measurements. The study discusses practical and theoretical implications, offering insights for organizations aiming to enhance project performance through effective leadership and knowledge-sharing practices.

Keywords: Shared Leadership, Knowledge Sharing, Sustainable Measurements, Organizational Performance, Project Success.

Abstract 26: doi:26/3IMC24/FBCOE(W)

A Study of Dynamic Marketing Gambits and Recommendations for Cheezious

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The topic "Study of Dynamic Marketing Gambits and Recommendations for Cheezious" presents a comprehensive analysis of Cheezious, a powerful and dominant fast-food brand that proudly embodies its Pakistani roots. This study examines the competitive landscape surrounding Cheezious in Pakistan, focusing on major competitors such as KFC, Domino's Pizza, and other American fast-food brands that have faced criticism for supporting genocides in Palestine and Gaza. Following the ongoing crisis in Palestine and Gaza, Cheezious has the opportunity to penetrate the Pakistani market more effectively and enhance its global presence.This research discusses the implications of the current boycott against Israeli products and brands, emphasizing the support for Cheezious as a local brand. It identifies marketing strategies that Cheezious can adopt to highlight its local roots and address existing marketing shortcomings. Through market research, it becomes evident that traditional marketing approaches are inadequate for attracting customers in the digital and e-commerce era.The proposed marketing strategies for Cheezious include key elements such as immersive experiential events that create memorable consumer experiences, strategic partnerships to broaden reach and establish credibility, and tailored digital interactions to strengthen brand affinity. This study aims to pinpoint the areas requiring development for Cheezious to successfully gain market share in Pakistan and thrive in a competitive landscape.

Keywords: Dynamic Marketing, Cheezious, Competitive Analysis, Digital Marketing Strategies, Brand Positioning, Consumer Engagement.

Abstract 27: doi:27/3IMC24/FBCOE(W)

Cola Next: An Analysis of Marketing Strategies and Recommendations

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This research explores the competitive landscape of the Pakistani soft drink market, focusing on Cola Next, which was launched by Mezan Beverages in 2016. Cola Next faces significant challenges from established brands like Coca-Cola and Pepsi. Despite a growing preference for local products due to shifting consumer attitudes, Cola Next has struggled to capture a substantial market share. The study examines Cola Next's current marketing strategies, including digital engagement, experiential events, and partnerships, which are essential for maintaining competitiveness in an e-commerce-driven environment. Key challenges highlighted include consumer preference for established brands, the need for innovation in product offerings, and advertising shortcomings. Additionally, the research provides an overview of Cola Next's connection to Pakistani cultural heritage, its product variety, and strategic distribution partnerships. To succeed in the competitive market, Cola Next must adopt more aggressive marketing tactics. These should include influencer partnerships, enhanced online engagement, emotion-driven campaigns, and direct competition with market leaders. The report offers actionable recommendations for Cola Next to enhance its visibility and market presence, such as leveraging social media, promoting through influential figures, and creating a sense of urgency around its products. By implementing these strategies, Cola Next aims to position itself as a dominant player in Pakistan's beverage industry.

Keywords: Cola Next, Marketing Strategies, Pakistani Soft Drink Market, Consumer Preferences, Brand Competition, Local Products.

Abstract 28: doi:28/3IMC24/FBCOE(W)

Impact of Personality Types on Glass Ceiling Beliefs

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Glass ceiling is a simile commonly used to explain the intangible set of barriers and blocks in front of female employees which decrease or reduce the advancement of female employees to leadership and top-level executive ranks (BASSIR et al., 2022). The purpose of this study was to study the impact of personality types on glass ceiling beliefs. The study was specifically aimed at finding the individual employees' perception about the glass ceiling and its effect on their career. Data was collected through self-administered questionnaires consisting of standardized scales. Convenience sampling was used in the study. Regression and correlation were used to find the impact of personality types on glass ceiling beliefs. The population of the current study consisted of only those women who were able to understand English questionnaires and had work experience in an organization minimum of one year. Women were approached from five sectors i.e. Health sector, bank sector, Administration, educational sector and telecommunication sector. Total sample was of 238 women with the age range of 21-50 (M= 29.56, SD=5.79). It was found that personality types are affected by glass ceiling Further, a positive relationship between glass ceiling, conscientiousness and extraversion was expected and data also supported this assumption. Data has also supported the assumption of a negative relationship between openness and glass ceiling. Further Analysis was conducted with sub types of glass ceiling and personality type. Results have been discussed in the light of past studies and implications for organizations and researchers have also been suggested.

Keywords: Glass Ceiling, Personality.

Abstract 29: doi:29/3IMC24/FBCOE(W)

Impact of Climate Change Anxiety on Well-Being and Quality of Life in Adults: Environmental Activism as a Mediator

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This research aimed to investigate the impact of climate change anxiety on quality of life and well-being, with environmental activism serving as a buffer among adults from different cities in Pakistan. Recognizing the relevance of this topic, the study explored how climate change anxiety affects individuals' well-being and quality of life, and how environmental activism may mitigate this impact. A quantitative, correlational research design was employed to examine the relationship between the independent variable (climate change anxiety), the two dependent variables (quality of life and well-being), and the mediating role of environmental activism. Data was collected both online and through physical interactions using convenience sampling. The study population consisted of adults aged 18 to 60+ from Lahore, Karachi, Rawalpindi, and Islamabad. Climate change anxiety was measured using the Climate Change Anxiety Scale, quality of life was assessed via the World Health Organization Quality of Life Scale (WHOQOL-Bref), well-being was measured using the WHO-5 Well-Being Index, and environmental activism was evaluated using the Environmental Action Scale (EAS). Data collection was conducted in two phases: an initial sample of 50 adults was used to assess the reliability and validity of the instruments, followed by a full sample of 312 adults (78 from each city). The findings revealed a significant impact of climate change anxiety on both well-being and quality of life. However, this effect was reduced by the mediating role of environmental activism. The results further indicated that climate change anxiety was higher in certain cities and more pronounced in females compared to males. The study's recommendations include addressing climate change anxiety through workshops, behavioral interventions targeting negative coping strategies, and programs that promote environmental activism to reduce anxiety among adults.

Keywords: Climate Change Anxiety, Quality of Life, Well-Being, Environmental Activism, Mediating Effect.

Abstract 30: doi:30/3IMC24/FBCOE(W)

Impact of Family Caregiver Burden on the Psychological Health of Parents of Children with Intellectual Disabilities: Buffering Effect of Resilience

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This study examines how caregiver burden affects the psychological health of parents raising children with intellectual disabilities and explores whether resilience can help lessen these negative effects. We surveyed 200 parents; 100 fathers and 100 mothers using three tools: General Health Questionnaire-12 (GHQ-12) to assess psychological well-being, the Brief Resilience Scale-6 (BRS-6) to measure resilience, and the Burden Scale for Family Caregivers- 28 (BSFC-28) to evaluate caregiver burden. The results show that higher caregiver burden is associated with worse psychological health, including more stress, anxiety, and depression. Specifically, as the burden reported by caregivers increased; their psychological well-being as measured by the GHQ-12 decreased. However, parents who reported higher levels of resilience measured by the BRS-6 tended to experience less psychological distress despite the high burden they faced. This suggests that resilience plays a key role in reducing the negative impact of caregiver burden on mental health. The findings indicate that while caregiver burden significantly affects psychological well-being, resilience can help buffer this impact leading to better mental health outcomes for parents. The study highlights the importance of supporting caregivers in building resilience as a way to improve their psychological health and overall well- being.

Keywords: Family Caregiver Burden, Psychological Health, Parents of Children with Intellectual Disabilities, Resilience, Buffering Effect, Caregiver Stress

Abstract 31: doi:31/3IMC24/FBCOE(W)

Impact of Korean Dramas on Body Dissatisfaction and Parasocial Interaction in Female Adolescents and Early Adults

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The increasing popularity of Korean dramas has significantly influenced the global media landscape, particularly among young females. This research examines the impact of Korean dramas on body dissatisfaction and parasocial interaction among female adolescents and early adults. The first objective is to examine the impact of Korean dramas on body dissatisfaction and parasocial interaction in female adolescents and early adults. The second objective aims to explore the difference in body dissatisfaction between female adolescents and early adults. The third objective aims to explore the difference in parasocial interaction between female adolescents and early adults. Further research is required to explore the broader impact of the Korean dramas across different age groups and genders to understand its global implications. This study utilized a quantitative, correlational research design to observe the influence of Korean dramas on body dissatisfaction and parasocial interaction. Data was collected from female adolescents and early adults aged 10 to 35 years. The assessment of Korean dramas' impact was conducted using two primary items. First, participants were asked whether they watch Korean dramas? Second, the frequency of viewing was measured. These items were designed to gauge both the presence and extent of Korean drama consumption among the participants. Body dissatisfaction was measured using the Contour Drawing Rating Scale (CDRS), while parasocial interaction was assessed using the Parasocial Interaction Scale (PSI). Data was collected in two phases: phase 1 involved testing the reliability and validity of the instruments with 50 participants, while phase 2 involved gathering data from 300 participants. The study found a significant impact of Korean dramas on body dissatisfaction and parasocial interactions in female adolescents and early adults. The study's findings suggest the need for interventions, such as media literacy programs, to address body image issues among young females. Furthermore, fostering healthy parasocial interactions could provide emotional benefits and enhance social well-being, offering a balanced view of media influence.

Keywords: Korean dramas, Body dissatisfaction, Parasocial interaction, Female adolescents, Early adults, Media influence.

Abstract 32: doi:32/3IMC24/FBCOE(W)

Impact of Leadership Styles on Job Stress and Organizational Commitment Among Teachers of Public and Private Sectors

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This study explores the impact of leadership styles on job stress and organizational commitment among teachers in public and private sector universities. It focuses on transformational, transactional, and laissez-faire leadership styles from Bass and Avolio's Full Range Leadership Model. The research examines how these styles influence job stress—defined as harmful physical and emotional responses to job demands—and organizational commitment, which includes affective, normative, and continuance commitment. The study aims to identify relationships between leadership styles and both job stress and organizational commitment, with a specific focus on differences between public and private sector teachers. This research is valuable for educational leaders, policymakers, and stakeholders, as it addresses critical challenges such as teacher burnout, high turnover, and the need for sustained organizational commitment. The study suggests that transformational leadership may be particularly effective in reducing job stress and enhancing commitment. A quantitative research design was employed, using the Multifactor Leadership Questionnaire (MLQ), Job Stress Scale (JSS), and Organizational Commitment Scale (OCS). Data was collected from a diverse sample of teachers in both sectors, and the reliability of the instruments was confirmed through a pilot study. Findings show significant differences in leadership styles between sectors, with varied effects on job stress and organizational commitment. These results have practical implications for developing leadership training programs that promote effective leadership styles, improving work environments and teacher outcomes.

Keywords: Leadership Styles, Job Stress, Organizational Commitment, Transformational Leadership, Public Sector, Private Sector.

Abstract 33: doi:33/3IMC24/FBCOE(W)

Mediating Character of Moral Identity between Responsible Leadership and Project Citizenship Behavior: Stakeholders' Role

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The purpose of the study is to find the impact of responsible leadership on project citizenship behavior and how stakeholder expectation moderates and moral identity mediates this relationship. Survey questionnaires have been used for the collection of data where the items and scales for each variable have been taken from the past studies. The sample size for the study is 438 respondents who are employees in the construction industry. The sample includes the employees working in the construction companies of Rawalpindi and Islamabad, Pakistan. The response style bias has been used where the respondents did not change the answer throughout and those who have changed their responses were omitted from the results. With the help of Smart PLS, results have been derived. The findings suggest that managerial support needs to be made strong when it comes to stakeholder expectations for moderating the relationship between Project Citizenship behavior and responsible leadership.

Keywords: Responsible Leadership, Project Citizenship Behavior, Stakeholder Expectations, Moral Identity, Moderating Effect, Construction Industry.

Abstract 34: doi:34/3IMC24/FBCOE(W)

Social Competence, Psychological Resilience and Behavioral Problems in Preschool Children: The Mediating Role of Emotion Regulation

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Early-life psychological resilience and social competency issues in kids might lead to behavioral issues. Prior research indicates that behavior modification programs improve social competence while reducing behavioral issues in children. The purpose of this study is to investigate the potential mediating function of emotion regulation and to obtain a deeper understanding of the relationship between behavioral issues, psychological well being, social competence, and resilience. The study comprised 300 kindergarten students in Rawalpindi and Islamabad, ages 4-6 (150 boys, 50%; 150 girls, 50%; mean age = 4.93). Maternal data on children's behavioral issues and ability to control their emotions was gathered, while teacher data on social competence and psychological resilience was gathered. While psychological resilience indirectly and strongly predicted behavioral problems through emotion control, social competence had an inverse relationship with behavioral problems. The link between psychological resilience, social competence, and behavioral issues is partially mediated by emotion management. The significance of fostering the development of emotion management skills throughout the preschool years was underlined in accordance with the findings.

Keywords: Preschool Children, Social Competence, Resilience, Emotion Regulation, Behavioral Problems, Mediating Role

Abstract 35: doi:35/3IMC24/FBCOE(W)

The Effect of Workplace Bullying on Career Resilience and Personal Competencies among Employees

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The present study focuses on the effect of workplace bullying on career resilience and personal competencies among employees. The current research aimed at exploring the effect of workplace bullying on career resilience and personal competencies in bank employees of two different occupational setups. The study was conducted in two phases. Phase 1 was a pilot study and phase 2 was the main study. The pilot study was done using sample of 50 to check the reliability and validity of the scales, then the main study was conducted on 300 participants. These participants were employees from different banks of two different sectors, private and public sector. The sample was collected using the purposive sampling. Data of 150 employees was obtained from 1st year of female and male employees and the remaining 150 data was collected from the 2nd year of female and male employees to analyze the effect of workplace bullying. Three different questionnaires were used: Workplace Bullying Scale (Ambreen Anjum et Al. 2019), the Career Resilience Scale (Naeema Pasha. 2019), and the Competency Scale (Dulewicz. 2005). Data was analyzed using SPSS, and statistical tests such as regression and independent sample T-tests were administered on 300 participants. The results showed a significant effect of the workplace on career resilience and personal competencies. The findings of the study also revealed that male and female employees in their 2nd year experienced higher levels of workplace bullying, and also had higher career resilience. Additionally, the results showed a difference in personal competencies, with male and female employees in their 1st year having a higher rate of competencies among them. This research recommends future researchers to conduct future researches on employees with diverse background and to conduct longitudinal studies to examine the long-term effects of workplace bullying on career resilience and personal competencies. Policy changes are recommended to reduce workplace bullying and implement interventions to enhance employee abilities.

Keywords: Workplace Bullying, Career Resilience, Personal Competencies

Abstract 36: doi:36/3IMC24/FBCOE(W)

Impact of Sedentary Behavior on Psychological Well Being of Young Adults

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The purpose of this study is to provide a clear pathway for exploring the relationship between sedentary behavior and psychological well-being in young adults. The research problem is centered on understanding how prolonged inactivity, including screen time and other sedentary activities, contributes to issues such as anxiety, depression, and social isolation. In this study, a quantitative research design is used and a survey is employed. The psychological well-being Scale (by Carol D.Ryff in 1989) and Sedentary Behavior Scale(by D.E Rosenberg in 2010) are used. The study population consisted of university students aged 18 to 25 attending various universities of Islamabad. Analysis revealed a significant negative correlation between sedentary behavior and psychological well-being. This study concludes that sedentary behavior significantly impacts mental health. Based on these findings, it is recommended that universities should organize campus-wide fitness challenges programs like step-count competitions, stair climbing challenges, active study break challenges and group walkathon or campus tour for the stimulation of student's physical activity through friendly competitions and community engagement.

Keywords: Sedentary Behavior, Psychological well-being, Young Adults.

Abstract 37: doi:37/3IMC24/FBCOE(W)

Effect of Anxiety on Thought Suppression, Acceptance and Avoidance Behavior in Younger and Older Adult

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This study investigates the impact of anxiety on thought suppression, acceptance, and avoidance behaviors in younger and older adults. Thought suppression occurs when individuals attempt to block distressing thoughts, often leading to the paradoxical rebound effect, where the suppressed thoughts return more intensely. This rebound effect is generally more pronounced in people with high anxiety. In contrast, acceptance involves recognizing distressing thoughts without trying to eliminate them, while avoidance is the tendency to avoid situations that provoke anxiety. The study involved 350 female participants, including students from Fazaia Bilquis College for Women and others recruited online. To measure anxiety, thought suppression, and acceptance or avoidance behaviors, the Manifest Anxiety Scale (MAS), White Bear Suppression Inventory (WBSI), and Acceptance and Action Questionnaire (AAQ-R) were utilized. Statistical analyses, including T-tests, ANOVA, and linear regression, were employed to evaluate the data. Results revealed that younger adults demonstrated a stronger association between anxiety and thought suppression compared to older adults. Thought suppression was significantly linked to acceptance and avoidance behaviors across all participants, regardless of their marital status or educational background. The findings suggest that while thought suppression is a common response to anxiety, it may not be the most effective coping mechanism, with age playing a significant role in this relationship. Moreover, acceptance-based strategies, such as mindfulness, appear to offer better psychological outcomes. Younger adults were found to have higher anxiety levels and greater reliance on thought suppression than older adults. Additionally, the study indicated that women experienced higher levels of anxiety, and both education and marital status influenced acceptance and avoidance behaviors. These results underline the importance of adopting age-specific mental health interventions and suggest that acceptance-based approaches may be more effective in managing anxiety. The research adhered to ethical guidelines, ensuring participant confidentiality and informed consent throughout the study.

Keywords: Thought suppression, Anxiety, Acceptance, Avoidance behavior, Younger Adults, Older Adults.

Abstract 38: doi:38/3IMC24/FBCOE(W)

Effect of Childhood Maltreatment on Sleep Quality in University Students: Mediating Role of Alexithymia

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The research aimed at exploring the effect of childhood maltreatment in university students along with studying the mediating role of alexithymia between the two variables. The objectives of the research also included finding out the gender differences in childhood maltreatment, sleep quality, and alexithymia among male and female population of the university. The study was conducted in two phases. Phase 1 was pilot study, done on sample of 50 to check the reliability and validity of the scales. Phase 2 was the main study, conducted on 300 participants. These participants were students from different universities. The sample was collected using the convenient sampling. Data of 150 was obtained from the female students and remaining 150 data was collected from the male students. Three different questionnaires were used: Childhood Trauma Questionnaire (David P. Bernstein, 1996), Sleep Quality Scale (H Yi. 2006), and Toronto Alexithymia Scale Questionnaire (Bagby et al. 1994). Data was analyzed using SPSS, and statistical tests such as regression analysis, mediation, and independent sample T-tests were administered. Results showed a significant positive effect of childhood maltreatment on sleep quality, and also that alexithymia partially mediates the relationship between the two variables. The results further revealed a significant gender difference in childhood maltreatment among university students, with male having higher prevalence than female. But results for gender differences in sleep quality and alexithymia were non-significant. To address the presence of significant effect of childhood maltreatment on sleep quality, it is recommended to provide resources and support systems for the students to spread awareness, and implement effective strategies to help students maintain better sleep. For evaluating the factors responsible for non-significant gender differences in sleep quality and alexithymia, it is recommended to conduct further researches on these two variables to help understand the variables in a better light.

Keywords: Childhood Maltreatment, Sleep Quality, Alexithymia

Abstract 39: doi:39/3IMC24/FBCOE(W)

Exploring the Potential Implementation of Outcome Based Education (OBE) Standards in B. Ed (Hons) Program

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This study examines the impact of anxiety on thought suppression, acceptance, and avoidance behaviors in younger and older adults. Thought suppression, the attempt to push away distressing thoughts, often results in a rebound effect, particularly in individuals with high anxiety. In contrast, acceptance involves acknowledging such thoughts without resisting them, while avoidance involves evading anxiety-inducing situations. Conducted with 350 female participants from Fazaia Bilquis College and others online, the study used tools like the Manifest Anxiety Scale (MAS), White Bear Suppression Inventory (WBSI), and Acceptance and Action Questionnaire (AAQ-R) to assess these variables. Data analysis revealed that younger adults had a stronger link between anxiety and thought suppression than older adults. Thought suppression was also linked to acceptance and avoidance behaviors across all participants. The findings suggest that acceptance-based strategies, such as mindfulness, may offer more effective coping mechanisms for anxiety, especially in younger adults. The study underscores the need for age-specific mental health strategies to manage anxiety.

Keywords: Outcome Based Education, Educational Knowledge, Problem Analysis, Lifelong Learning, Communication

Abstract 40: doi:40/3IMC24/FBCOE(W)

Formative Online Assessment at Higher Education Level: A Mixed Method Approach

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Formative online assessments work toward the transformation and digitalization of higher education assessment practices. Information Communication Technology (ICT) has emerged as a crucial instrument in the world today. In Pakistan and everywhere, it is an emerging trend to study online and conduct online-assessment. It is also the alternative method of assessment during uncertain natural and man-made emergency situations. The present study aimed to analyse the environment of formative online assessment at higher education level. To achieve these objectives, the researcher utilized a concurrent triangulation mixed method design. Population for the study included 169 teachers and 5362 students from six universities in the Islamabad Capital Territory. According to the findings of the study, the total environment of online formative assessment was inefficacious for students in terms of virtual, emotional, and intellectual settings. Overall comparison of demographic variables showed that the private sector universities, female candidates, and rural area students were affected more because of the virtual, emotional, and overall environment, whereas in terms of the intellectual environment, both sectors, genders, and all residential areas were affected equally during online formative assessment. The study recommended that diverse stakeholders may work together to improve the quality of products/services in online assessment.

Keywords: Online Assessment, Formative Online Assessment, Learning Environment, Higher Education, Virtual Environment, Emotional Environment and Intellectual Environment.

Abstract 41: doi:41/3IMC24/FBCOE(W)

Gender-Based Analysis of the Effectiveness of Storytelling in Boosting Academic Motivation among Elementary Students

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The study, titled "Gender-Based Analysis of the Effectiveness of Storytelling in Boosting Academic Motivation among Elementary Students", was conducted to explore Academic Motivation through storytelling method, to find gender difference between Pre and post testing on academic motivation scale. The current study was experimental in nature. The target population of the study consisted of primary school students from Fazaia Primary School PAF NUR KHAN RWP. The research sample consisted of 100 primary school students, 50 (25 females and 25 males) in pre testing phase and 50 (25 females and 25 males) in post testing phase. The data was collected through purposive sampling technique. Academic motivation questionnaire, developed by Vallerand et al. (1993), was used. This Questionnaire was used to collect data from the sample population. This study was conducted in two phases. In phase I, reliability and validity of the questionnaire was checked. Phase II consisted of the main study, which aimed to achieve the research objective. Data was analyzed with the help of statistical packages for social sciences (SPSS). The tests that were applied included reliability test, paired sample T-Test and independent sample T-Test. According to the obtained results, there was a significant difference between the mean score of male and female student's academic motivation in pre and post testing. The academic motivation score of male students was significantly lower than female students. This research tends to offer professional development and training for teachers on effective storytelling strategies for classroom use. It is recommended to incorporate relatable, action-packed stories with interactive, technology-enhanced elements and role-playing to boost engagement and motivation of male students. Future researchers can compare the effectiveness of storytelling interventions with other innovative teaching methods to identify the most effective approaches for improving academic motivation among elementary school children.

Keywords: Storytelling, Academic Motivation, Gender analysis

Abstract 42: doi:42/3IMC24/FBCOE(W)

Improving Students Engagement Through Team Teaching at Primary Level in Rawalpindi

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The study, titled “Improving Students Engagement through Team Teaching at Primary Level in Rawalpindi”, was conducted to improve student engagement. The study was experimental and quantitative in nature. The target population of the study comprised of primary level 4th grade students at Fazaia School situated in Rawalpindi. The research sample consisted of 50 students, including females and males, from Fazaia primary school. The sample was selected through convenience sampling technique. Questionnaire was also used to collect numerical data from the sample selected from 2 sections i.e., class 4th C and D. Student engagement questionnaire developed by Reeve (2013) was used. This study was conducted in two phases. In phase I, reliability of the questionnaire was checked. In phase II, the main study was conducted which aimed to achieve the research objectives and test the formulated hypotheses. The statistical package utilized for this purpose was SPSS.

Keywords: Student Engagement, Team Teaching.

Abstract 43: doi:43/3IMC24/FBCOE(W)

Inspirational Leadership in Higher Education: Female Teachers' Influence in Pakistan's Twin Cities

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Education is essential for everyone and flourishes in a positive classroom environment where teachers cultivate strong connections with their students. Teachers serve not only as educators but also as motivators, inspirational figures, and guides for students to achieve their personal and academic goals. Universities play a critical role in promoting gender equality and combating discrimination. Female teachers' inspirational leadership in higher education significantly impacts students' competencies and personality development. However, there is limited research on the inspirational leadership of female teachers and its effect on student motivation in higher education, especially in the twin cities of Pakistan. This study aims to explore how female teachers' positive leadership characteristics enhance student motivation and academic performance. Additionally, it examines the prevalence of depressive symptoms and associated risk factors in female university teachers in Islamabad and Rawalpindi, using a cross-sectional design. The study employed a quantitative research design, with data collected from 300 female university teachers through personal visits. A 48-item inventory questionnaire with seven sub-dimensions on a three-point rating scale was used to gauge the teachers' perceptions. Results showed that 70% of teachers were frequently available to assist students, and 60% continued to offer support after course completion. Female teachers' inspirational leadership fostered stronger student-teacher relationships, with 53% of students reporting that their teachers managed the classroom well and submitted homework or assignments on time. Furthermore, 50% of the teachers utilized effective teaching methodologies and earned personal respect from students, demonstrating that female leadership positively influences student motivation and academic outcomes. The study concludes that female teachers' inspirational leadership serves as a critical motivator for students, enhancing their competencies, communication, and academic success. These findings underscore the importance of fostering inspirational leadership in higher education to boost student motivation and performance.

Keywords: Inspirational Leadership, Female Teachers, Higher Education, Student Motivation, Teacher-Student Relationships, Twin Cities of Pakistan.

Abstract 44: doi:44/3IMC24/FBCOE(W)

Optimizing Academic Achievement: Tailoring Teaching Strategies to Learning Styles

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This study, titled “Optimizing Academic Achievement: Tailoring Teaching Strategies to Learning Styles,” explores the relationship between students' learning styles and their academic achievement. The primary objective was to identify different learning styles—visual, auditory, and kinesthetic—among 5th-grade students and assess the impact of tailored teaching strategies on their academic performance. The research followed a quantitative approach, utilizing a post-test-only control group design. The target population consisted of all 5th-grade students, both male and female, from Fazaia Primary School. A purposive sampling technique was employed to select a sample of 30 students, divided into two groups of 15 each. The data collection instrument was a questionnaire developed by David Kolb (1984), consisting of 54 items designed to assess students' learning styles. SPSS 21 software was used to analyze the data, employing descriptive statistics, mean scores, and independent sample t-tests to test the study’s hypotheses. The post-test-only design helped in determining the effects of teaching strategies on academic achievement while minimizing biases from pre-test measurements. The findings suggest that matching teaching strategies to students’ learning styles significantly enhances academic performance, highlighting the need for personalized teaching methods in elementary education.

Keywords: Academic Achievement, Learning Styles, Tailored Teaching, Elementary Education, Quantitative Research.

Abstract 45: doi:45/3IMC24/FBCOE(W)

Relationship Between Parent-Child Relationships and Attentional Focus in Female Undergraduate Students

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This research investigated the correlation between parent-child relationship and attentional focus in female undergraduate students, recognizing its potential impact in educational settings. The study examined the relationship between these variables and their differences across various factors. The main objective was to determine if a relationship exists between parent-child relationship and attentional focus in female undergraduate students. A quantitative, correlational research design was utilized, with data collected through physical interaction. The population of interest was female undergraduate students of Fazaia Bilquis College of Education for Women. Parent-child relationship was assessed using the Parental Bonding Instrument (PBI), while attentional focus was measured with the Attention Control Scale (ACS). Data collection occurred in two phases: first, a sample of 50 students for reliability testing of instruments, and second, a sample of 300 students for the main study. Questionnaires were distributed among participants through physical interaction. Statistical Package of Social Sciences was used to analyze the results. Findings suggested a very strong and positive correlation between the care element in parent-child relationship and attentional focus, indicating a significant relationship. Conversely, a very weak and positive correlation was found between the overprotection element and attentional focus, suggesting an insignificant relationship. Recommendations included fostering positive parent-child relationships through awareness campaigns, workshops, and seminars. Academic support programs, teacher training, and parental involvement in creating a supportive environment were identified as crucial strategies to improve students' attentional focus. The study recommended conducting longitudinal research to observe the dynamics of parent-child relationship and attentional focus throughout development. Further studies involving diverse populations and exploring additional factors influencing these variables were also suggested.

Keywords: Parent-child relationship, Attentional focus, female undergraduate students, educational psychology

Abstract 46: doi:46/3IMC24/FBCOE(W)

Relationship Between Multidimensional Perfectionism and Cognitive Flexibility In Undergraduate Students

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This research aimed to explore the connection between multidimensional perfectionism and cognitive flexibility among undergraduate students, given the potential implications for educational settings. The study specifically examined how these two variables—multidimensional perfectionism and cognitive flexibility—interrelate. Using a quantitative, correlational research design, the study sought to identify the relationship between these variables. Data were collected through both online and in-person methods. The target population comprised undergraduate students. Multidimensional perfectionism was measured using the Multidimensional Perfectionism Scale (MPS), while cognitive flexibility was assessed with the Cognitive Flexibility Inventory (CFI). Data collection occurred in two phases. In Phase 1, questionnaires were physically distributed to 50 students. Phase 2 involved a larger sample of 300 students, with data collected both physically and online via platforms such as WhatsApp and Instagram. The collected data were analyzed using the Statistical Package for the Social Sciences (SPSS). The analysis revealed a strong positive correlation ($r = 0.683$, $p < 0.01$) between multidimensional perfectionism and cognitive flexibility, indicating a significant relationship between these constructs.Based on the findings, the study recommends several avenues for future research. Longitudinal studies are suggested to track developmental changes in multidimensional perfectionism and cognitive flexibility over time, providing insights into their evolution throughout students' academic journeys. Additionally, research should investigate the effectiveness of interventions aimed at improving academic performance, mental health, and overall well-being among students. Future studies should also extend beyond undergraduates to include high school and graduate students, examining whether the identified relationships persist or vary across different educational levels. Furthermore, researchers are encouraged to explore the influence of cultural and contextual factors on the relationship between multidimensional perfectionism and cognitive flexibility, including cross-cultural studies to better understand these dynamics.

Keywords: Multidimensional perfectionism, Cognitive flexibility, Undergraduate students, Mental health

Abstract 47: doi:47/3IMC24/FBCOE(W)

To Study the Effect of Problem-Solving Style on Creativity Among Undergraduate Students

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This research delves into how problem-solving styles relate to creativity among undergraduate students, with a particular focus on whether these traits vary by gender and birth order. The main goal is to see if there is a meaningful connection between how students approach problem-solving and their creative abilities, and to explore if gender and birth order play a role in shaping these traits. To explore this, the study uses a quantitative approach, gathering data through two key tools: the Problem-Solving Style Questionnaire and the Kaufman Domains of Creativity Scale. The research involved 350 undergraduate students from universities in Rawalpindi and Islamabad, with an equal split between male and female participants. The data was analysed using statistical methods like correlation and regression analysis to uncover any patterns or relationships. The results suggest that while there is a slight positive link between problem-solving styles and creativity, it is not strong enough to be considered statistically significant. Interestingly, the study finds that female students tend to score higher in both creativity and problem-solving compared to their male counterparts. However, birth order doesn't seem to have much impact on either trait.

Based on these outcomes, the study suggests that future research could benefit from a larger sample size and more precise tools to better capture the relationship between problem-solving and creativity. It also recommends looking into other factors, such as cultural influences, that might affect these traits. These insights could help educators develop strategies to nurture creativity and effective problem-solving skills among students.

Keywords: Problem-solving Styles, Creativity, Undergraduate Students, Gender Differences, Educational Programs.

Abstract 48: doi:48/3IMC24/FBCOE(W)

Relationship Between Prosocial Behavior and Personality Traits Among Adults

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The present study was conducted to find out the relationship between prosocial behavior and personality traits among adults and to identify specific personality traits that are most strongly associated with different types of prosocial behavior (e.g., helping, sharing, volunteering). In this study, the quantitative research design was used and a survey was employed. The instrument used to measure personality traits was BFI (Kentle R. L., 1991) and for prosocial behavior PSA (Carlo G and Randall, 2002) was used. The population for this study included all university students aged 19 to 25. This research included students attending universities or colleges within this age range. The sample used for the research was divided into two phases. The first phase included 50 samples for prior study to check reliability and validity. Second phase included collection of 300 samples for field test. The sampling technique used for research was purposive sampling. According to the findings of the research study, adults with higher agreeableness, conscientiousness, and openness tend to exhibit more prosocial behavior. There is a significant positive correlation between prosocial behavior. Recommendations of the research is to incorporate prosocial behavior training in education and workplace settings and to focus on building personality traits among university students.

Keywords: Prosocial behavior and Personality traits.

Abstract 49: doi:49/3IMC24/FBCOE(W)

Life Skills Development Among Students at Secondary Level: A Need Analysis

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This study aims to assess the levels of life skills development among secondary school students and to compare these skills based on gender. The Social Skills Development and Behavior Model (SSDBC) by Kadesjö et al. (2017) served as the theoretical framework, focusing on attributes such as empathy, teamwork, emotions, communication, physical appearance, relationships, and confidence. The research followed a quantitative paradigm with a descriptive research design and survey method for data collection. The population consisted of 919 teachers (439 male and 480 female) from Punjab Government schools during the 2020-2021 session. Stratified random sampling was applied, selecting a 20% sample from each stratum, resulting in a total sample of 184 participants (88 male and 96 female). The "Social Skills Development and Behavior Checklist" (SSDBC) was adapted for data collection, with a reliability score of 0.785. Results indicated that 62% of students demonstrated above-average life skills, with female students outperforming their male counterparts. The findings suggest that teachers should foster a friendly classroom environment to encourage student participation, and schools should organize workshops and activities that provide students with opportunities to enhance their life skills.

Keywords: Life Skills, Social Skills Development, Gender Comparison, Secondary Education, Quantitative Research.

Abstract 50: doi:50/3IMC24/FBCOE(W)

Relationship Between Emotional Intelligence and Conflict Management Styles Among Adults

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The purpose of this study was to measure the relationship between Emotional Intelligence (El) and Conflict Management Styles among adults. The hypothesis was that there would be a statistically significant positive relationship between scores on Emotional Intelligence, as measured by the Bar-On Emotional Quotient Inventory (EQ-i) (Bar-On, R. (2004) and scores on Conflict Management Style, as measured by the Thomas-Kilmann Management of Differences Exercises (MODE) instrument (Tuxedo NY: Xicom, 1974). The research design chosen for this study was correlational and quantitative. The targeted population was adults, i.e., individuals 18 years and older, in Rawalpindi and Islamabad, who were solicited by the researcher. There were 100 participants in the sample, with 50% females and 50% males, selected using purposive sampling. The collected data was analyzed statistically using SPSS and Pearson product moment (r) correlation test was applied. The majority of individuals had a high or moderate Emotional-Intelligence. When it came to handling conflicts, people with higher emotional intelligence favored cooperation and compromise approaches, where as those with lower Emotional Intelligence favored accommodation and avoidance strategies. The findings revealed a significant correlation between emotional intelligence and conflict management styles.

Keywords: Emotional intelligence, Conflict management styles, Thomas-Kilmann MODE, the Bar-On EQ-i

Abstract 51: doi:51/3IMC24/FBCOE(W)

A Web Game to Predict Dyslexia in Children

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Dyslexia is a common neurodevelopmental disorder affecting children's reading and writing abilities, making early detection essential for reducing its impact on academic and social development. Research has emphasized the importance of early intervention in improving literacy outcomes for dyslexic children. This project aims to create a web-based game for the early prediction of dyslexia in children aged 4-12. The game includes interactive quizzes that evaluate word recognition, spelling, and phonological skills. Using deep learning, specifically the VGG16 Convolutional Neural Network (CNN) architecture, the game analyzes handwriting samples to identify dyslexia-related patterns. This approach automates the feature extraction process, leading to precise early detection of dyslexia. Data was gathered from diverse educational environments to ensure the robustness and generalizability of the model. The study found that the web game accurately predicted early dyslexia signs with high accuracy. Additionally, machine learning algorithms such as Random Forest, Gradient Boosting, and Voting Classifiers were used for comparative analysis. The model was validated on multiple datasets, demonstrating its effectiveness in different linguistic contexts. This innovative tool provides educators and parents with a resource for early dyslexia detection, enabling timely intervention. The game's inclusive design ensures accessibility for diverse demographic groups, supporting widespread use. Future improvements may include expanding the game to detect dyslexia in additional languages by training on datasets like Urdu Haroof and exploring advanced AI techniques to further enhance predictive accuracy.

Keywords: Dyslexia, Early Detection, Handwriting Analysis, Convolutional Neural Network, VGG16, Machine Learning, Educational Technology.

Abstract 52: doi:52/3IMC24/FBCOE(W)

Breast Cancer Detection Using Anemia and Depression Datasets

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Breast cancer is a disease where breast cells grow uncontrollably. Depression is a mental state characterized by prolonged periods of sadness and hopelessness, while anemia is a condition in which the body lacks enough healthy red blood cells to provide adequate oxygen to tissues. This research uses three datasets—breast cancer, anemia, and depression—to find potential correlations between these conditions. The mean approach was applied to handle missing values, followed by label encoding to convert categorical data into numerical format. By combining the datasets, new patterns and relationships were discovered, such as correlations between anemia-related hemoglobin levels and tumor characteristics in breast cancer patients. These findings highlight the importance of considering hematological factors in cancer diagnosis and treatment. The study improves upon previous algorithms by incorporating advanced machine learning and deep learning techniques. Traditional algorithms like Support Vector Machine (SVM) and Linear Regression (LR) were used alongside newer techniques like Ensemble Learning, which includes Random Forest (RF), AdaBoost (AD), and Deep Neural Networks (DNN), as well as 1D Convolutional Neural Networks (1D-CNN). Among all approaches, Ensemble Learning with AdaBoost and XGBoost classifiers provided the highest accuracy, demonstrating the potential of these techniques for improving breast cancer detection.

Keywords: Machine Learning, Support Vector Machine, Linear Regression, AdaBoost, Random Forest, Deep Neural Network, 1D Convolutional Neural Network, Transfer Learning.

Abstract 53: doi:53/3IMC24/FBCOE(W)

Code Summarizer a Deep Learning Transformer Based Model

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Code summarization plays a vital role in modern software development by providing concise explanations for the functionality of code, aiding developers in understanding and reusing code effectively. With the rise of object-oriented programming and code reusability, platforms like GitHub and StackOverflow have become essential resources for developers. However, the lack of detailed, up-to-date comments in code often hinders the decision-making process of whether to use a particular code snippet. This project addresses this issue by exploring deep learning models to automate and improve code summarization. Specifically, we fine-tuned two transformer-based models, Llama 3 and CodeBERT, to generate precise code summaries for Python and Java codebases. The proposed solution includes developing a web-based platform that integrates the most effective model, providing developers with accurate summaries, error detection, comment generation, and customization features. By automating these tasks, the project aims to enhance code comprehension and streamline the development process. The platform's user-friendly interface enables developers of all skill levels to interact with the summarization tool, improving productivity and collaboration in software development environments. This research contributes to the advancement of code summarization technologies, bridging the gap between complex codebases and efficient code documentation. Future directions include expanding the model's capabilities for additional programming languages and further refining its predictive accuracy.

Keywords: Code Summarization, Transformer Models, Llama 3, CodeBERT, Deep Learning, Software Development, Python, Java, Error Detection.

Abstract 54: doi:54/3IMC24/FBCOE(W)

Amazon Review Sense

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Customer feedback is essential for the success of e-commerce platforms. Sentiment analysis, a natural language processing technique, can automatically categorize emotions expressed in text. This research developed Amazon Review Sense, an AI-powered system designed to analyze Amazon product reviews and provide actionable insights. The primary objective was to create a user-friendly application that empowers consumers to make informed purchasing decisions. Real-time Amazon data was collected and processed using advanced machine learning and deep learning models, including Random Forest (RF), Support Vector Machine (SVM), Long Short-Term Memory (LSTM), BERT, and RoBERTa. These models were selected for their ability to effectively handle the complexities of natural language. Rigorous testing revealed high accuracies, with BERT achieving 97.8% and RoBERTa 98.3%, while RF and SVM reached accuracies of 80.5% and 79.9%, respectively, and LSTM attained 86.2%. To further enhance the system's capabilities, Named Entity Recognition (NER) was employed to identify and extract key entities from reviews, such as product names and attributes, enriching the feature extraction process for sentiment analysis. Amazon Review Sense offers real-time customer sentiment insights on Amazon products, significantly improving the user experience. Future research will focus on refining the models, integrating additional feedback sources, and addressing ethical considerations to ensure responsible and transparent use of AI. This innovation aims to enhance consumer satisfaction and support more effective product management on e-commerce platforms.

Keywords: Sentiment Analysis, Deep Learning, Amazon, Product Reviews, Machine Learning, Natural Language Processing, Named Entity Recognition

Abstract 55: doi:55/3IMC24/FBCOE(W)

Musical Playlist Generation Using Facial Expression Recognition

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Facial Expression Recognition (FER) has found applications in various fields such as education, gaming, robotics, and healthcare. One innovative application of FER is using it to generate personalized music playlists based on the user's mood. In this research, we have implemented a system that uses FER to analyze facial expressions and create mood-based music recommendations. By employing a Convolutional Neural Network (CNN)-based deep learning approach, the system can recognize facial expressions, identify emotions, and suggest music accordingly. The FER-2013 dataset was used for model training and evaluation. The proposed model achieves an accuracy of 95% and can predict six fundamental emotions: anger, fear, joy, neutral, sadness, and surprise. This interactive system not only enhances user experience but also demonstrates the practical application of facial emotion detection in real-time scenarios. The system has potential applications in environments where real-time emotion recognition is critical, providing personalized and engaging experiences.

Keywords: Artificial Intelligence, Convolutional Neural Networks, OpenCV, Facial Expression Recognition, Deep Learning, Emotion Detection.

Abstract 56: doi:56/3IMC24/FBCOE(W)

Machine Learning-Based Cardio Care Recommendation System

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The Machine Learning-Based Cardio Care Recommendation System (MLCR) addresses the critical issue of optimizing medication management for cardiac patients by detecting and preventing harmful drug interactions. This research explores the application of advanced machine learning algorithms, including Random Forest Classifier (RFC), Logistic Regression (LR), Support Vector Machine (SVM), and Long Short-Term Memory (LSTM), in revolutionizing disease diagnosis, prediction, and personalized treatment. The study focuses on developing and implementing a Drug Interaction and Recommendation System (DIRS) specifically designed for heart patients, offering precise, personalized medication recommendations while actively monitoring for potential drug interactions. Furthermore, the system incorporates real-time communication with emergency medical services for rapid response during critical situations. Performance metrics such as precision, recall, and confusion matrix evaluations underscore the effectiveness of the integrated DIRS and the Timely Intervention and Emergency Response (TIER) system in enhancing both medication management and patient safety. The research concludes by discussing the current challenges in cardiac medication management and demonstrating how innovative machine learning approaches can transform healthcare delivery, ultimately improving patient outcomes and emergency response capabilities.

Keywords: Machine Learning, Cardio Care, Drug Interaction, Personalized Treatment, Emergency Response, Medication Management.

Abstract 57: doi:57/3IMC24/FBCOE(W)

OCUNET: Multimodal Deep Learning for Efficient Ocular Disease Detection and Classification

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Ocular diseases are a major global health concern, affecting millions of people and leading to visual impairment and blindness. One common example, conjunctivitis (pink eye), is rapidly spreading among individuals. This project explores the prevalence, causes, and treatment strategies for critical ocular diseases, including glaucoma, cataracts, and diabetic retinopathy, utilizing multimodal deep learning techniques. The study applies Convolutional Neural Networks (CNN) and image processing methodologies to classify and detect ocular diseases, utilizing two datasets: EDC and Conjunctivitis. Prior research employed techniques such as EfficientNet, MobileNetV2, and VGG-16 on the EDC dataset. In contrast, our approach explores ResNet-152, VGG-19, Single Shot Detection (SSD), and Particle Swarm Optimization (PSO) for performance enhancement. A comparative analysis revealed that our method outperforms conventional techniques. VGG-19 achieved 92% accuracy and ResNet-152 yielded 91% accuracy on the Conjunctivitis dataset, while the PSO best-fit line achieved 0.23. For the EDC dataset, VGG-19 reached 90% accuracy, ResNet-152 89%, and PSO best-fit line 0.24. Based on these results, VGG-19 was selected as the final model for both datasets. This project also proposes an Android application for efficient ocular disease detection, revolutionizing the field by integrating cutting-edge deep learning models and reducing the cost of eye disease detection. This application serves as a foundation for further research in ocular disease detection as advancements in artificial intelligence continue.

Keywords: Artificial Intelligence (AI), Convolutional Neural Networks (CNN), Deep Learning, Image Processing, Ocular Disease Detection, Particle Swarm Optimization (PSO).

Abstract 58: doi:58/3IMC24/FBCOE(W)

Pneumonia Prediction Using Deep Learning Approach

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Pneumonia is a critical respiratory illness that can be fatal if not detected and treated early. It claims over 2.5 million lives each year, mostly children and infants. Early detection is crucial for timely medical intervention. Building upon a prior study that achieved 84% accuracy in Pneumonia detection using convolutional neural networks (CNNs), this research introduces more advanced deep learning models, including ResNet-152, Efficient-Net, VGG-19, and Mix-ViT, to enhance diagnostic accuracy. The dataset used for training these models was sourced from Kaggle. ResNet-152 delivered the highest accuracy, reaching 99.9%, while Mix-ViT achieved 99.2%, Efficient-Net 90%, and VGG-19 only 37%. To make this system accessible, a hybrid solution was developed by integrating the deep learning model with a Flask-powered web application, allowing users to upload chest X-ray images for real-time Pneumonia predictions. This practical tool offers a user-friendly interface for healthcare professionals and patients, improving early diagnosis and disease management. By leveraging state-of-the-art deep learning techniques, this work significantly enhances the potential for early Pneumonia detection, leading to better patient outcomes.

Keywords: Residual Network (ResNet152), Mixing attention Vision Transformer (Mix-Vit), Efficient-Network (Efficient-Net), Image processing, Visual Geometry Group (VGG-19), Flask API.

Abstract 59: doi:59/3IMC24/FBCOE(W)

Smart Mental Health Support System for Depression Detection And Therapy

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Depression is a pervasive mental health issue affecting millions worldwide, leading to significant personal, social, and economic impacts. Early detection and intervention are crucial for providing timely support, reducing symptom severity, and facilitating recovery. Despite existing mental health support systems, the accurate and timely identification of depression remains challenging, especially in its early stages. Traditional methods often rely on self-reporting or clinical observations, which can be time-consuming and prone to bias. This research aims to develop a system that leverages Artificial Neural Networks (ANNs) and Recurrent Neural Networks (RNNs) to enhance the accuracy and efficiency of early depression detection. The study also explores strategies for overcoming depression and provides a mental health score through a user-friendly chat interface. Focusing on the use of text data to detect emotional expressions related to depression, the system's effectiveness may be limited by the quality and diversity of the training data and its ability to generalize across different populations. The proposed system utilizes a deep learning approach, employing RNN models trained on datasets containing text-based emotional expressions. The methodology involves preprocessing textual data, feature extraction, and the application of machine learning algorithms to classify depression-related expressions, along with a user interface that provides mental health scores and suggests strategies to overcome depression. Preliminary results indicate that the RNN-based system can accurately identify depression-related expressions with high efficiency. The integration of machine learning techniques into mental health support shows significant potential for early intervention, critical for effective treatment and recovery. The findings contribute to the development of scalable and accessible mental health support systems, paving the way for more effective early intervention strategies and fostering a supportive and inclusive environment for individuals suffering from depression.

Keywords: Recurrent Neural Networks (RNNs), Artificial Neural Networks (ANNs), Machine Learning (ML), Sentiments Analysis, Deep Learning (DL), Mental Health.

Abstract 60: doi:60/3IMC24/FBCOE(W)

Smart Solar Panel Recommendation System

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Solar energy is quickly changing the face of electricity generation. However, the procedure of installing solar panels can be difficult for individuals and businesses. To address this, a Smart Solar Recommendation System is presented, in which we develop a user-friendly website for solar panel installation, making the process easier for households and companies. Website includes features such as a 24/7 AI-powered chatbot that provides constant guidance and answers user queries, as well as a trained recommendation system that considers user-specific parameters such as location, energy use, budget, and roof compatibility. People confront issues such as difficulties in the solar panel installation process, a lack of knowledge and awareness, inaccessible information and support, and a lack of individualized suggestion systems. To address these issues, we created a website with a 24/7 AI-powered chatbot that provides ongoing instruction and answers user questions. It also employs a personalized suggestion algorithm that takes into account user-specific characteristics such as location, energy consumption, budget, and roof compatibility. This research used Agile development methodology for website development because its iterative nature and short development cycles (sprints) allow for early and frequent feedback loops, machine learning techniques such as Decision Tree, Logistic Regression, Support Vector Machine), and Gradient Boosting Decision Tree, and NLP for chatbots that can be trained to analyze the sentiment and emotions expressed in user queries or responses. Furthermore, the ranking of the recommendations was deemed logical in 91% and 88% of situations. Overall, homeowners of solar-powered smart homes may be willing to employ such a system to maximize energy production. However, more research is needed to increase the accuracy of the values included in the recommendations and future enhancements will include a 3D roof visualization tool, educational modules, and financial analysis tools.

Keywords: commercial solar, solar energy solutions, home automation,24/7 AI chatbot, recommender system, smart home.

Abstract 61: doi:61/3IMC24/FBCOE(W)

Smart Vision Traffic Guard: Real-time Vehicle Monitoring with Number Plate Recognition

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The Smart Vision Traffic Guard is an innovative solution designed to enhance traffic management and public safety by addressing the limitations of traditional surveillance systems. With urbanization rapidly increasing, effective real-time vehicle tracking and number plate recognition are essential. Current systems often struggle with low-light conditions, fast-moving vehicles, and low accuracy, leading to inefficiencies in monitoring traffic flow and enforcing regulations. The Smart Vision Traffic Guard overcomes these challenges by leveraging advanced computer vision algorithms like YOLOv8 for real-time vehicle detection, achieving 90% accuracy, and Optical Character Recognition (OCR) for number plate recognition with 95% accuracy. High-resolution cameras and robust processing units enable the system to perform reliably even in challenging environments, ensuring better monitoring and law enforcement. The user-friendly interface allows for easy control, supporting authorities in efficiently managing traffic. With its scalability and adaptability, the Smart Vision Traffic Guard offers a comprehensive solution for both urban and rural areas, representing a significant advancement in modern traffic surveillance technology.

Keywords: Computer Vision, Object Detection, Number Plate Recognition, Traffic Surveillance, YOLOv8, OCR.

Abstract 62: doi:62/3IMC24/FBCOE(W)

Spam Email-Image Classification Using Advanced Models of CNN Architecture

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Spam emails are unsolicited messages sent to many recipients, often for commercial purposes. Spam is some unwanted material that may also be put in the form of images. Spam image classification is the task of identifying and categorizing images commonly associated with spam or unwanted content to enhance online safety and user experience. Many machine learning approaches are effective at detecting textual spam but this is not true for image spam. Moreover there are different CNN models were used for fruits image classification, rock image classification and cancer detection through images but they lack the exploration of efficiently classifying the spam images. The classifier proposed here aims to enhance the emails security through effectively classifying the spam images using four advanced models of CNN. Our proposed methodology is based on applying different deep learning models including Residual Networks (DenseNet), Visual Geometry Group (VGGNet), Convolutional Neural Network (CNN) and EfficientNet, to classify the unwanted spam images. The datasets name as Spam-image-new is utilized in this research for performance testing. Also, custom model training and data augmentation are employed to address the issue of a shortage of labeled data. In our implementation, we build the architecture of the models and then test them, resulting in an improved accuracy. The obtained results reveal that EfficientNet model yields the best performance achieving 97.47% testing and 97.96 % training accuracy and a computational testing time in the order of one to two seconds for the Spam-image-new dataset. Furthermore the classifier can be enhanced for other social media platforms such as FB, Insta and Twitter etc.

Keywords: Spam Image Classification, CNN Models, VGGNet, Dense Net, Deep Learning, Social Media Security

Abstract 63: doi:63/3IMC24/FBCOE(W)

Pre-Natal Detection of Vitamin K Deficiency Bleeding Using AI Techniques

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Vitamin K deficiency bleeding (VKDB) is a serious medical condition characterized by bleeding due to insufficient levels of vitamin K. It is most commonly associated with newborn infants but can also affect adults taking certain medications or with underlying health conditions. Clinical diagnosis of VKDB relies on a combination of patient history, physical examination, and laboratory tests. While these traditional methods are valuable, they may not always provide a definitive diagnosis, potentially leading to delays in treatment. This project aims to explore the feasibility of utilizing machine learning (ML) and deep learning (DL) approaches to enhance the accuracy and efficiency of VKDB diagnosis through the analysis of clinical data. The dataset for this project is sourced from the Kaggle repository and contains 12 attributes. The application of ML and DL for VKDB prediction remains a largely untapped area of research, despite its potential to analyze large datasets and identify complex patterns in patient information that may be missed by traditional methods. Additionally, there is an opportunity to develop a web interface specifically designed for VKDB risk assessment. This project aims to develop a predictive model for VKDB using machine learning and deep learning techniques such as Support Vector Machine (SVM), Decision Tree, Artificial Neural Network (ANN), and Logistic Regression. The models will be built based on patient data and outcomes. The best-performing model will be integrated into a user-friendly web interface to assist healthcare providers in assessing VKDB risk based on patient data.

Keywords: Vitamin K Deficiency Bleeding (VKDB), Pre-natal Detection, Machine Learning (ML), Support Vector Machine (SVM), Artificial Neural Network (ANN), Logistic Regression.

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Wellness Weaver Application

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With the growing trend of self-managed health and personalized care, digital solutions that empower individuals to make informed health decisions are increasingly important. Wellness Weaver is a health recommendation system designed to assist users by predicting diseases based on symptoms and suggesting appropriate medications and lifestyle adjustments. Traditional healthcare methods can be lengthy, inaccessible, and lack personalization, highlighting the need for an efficient system that accurately predicts diseases and provides tailored recommendations to improve personal well-being without replacing professional medical advice. The primary objective of Wellness Weaver is to utilize machine learning algorithms to predict diseases from patient-reported symptoms and deliver corresponding medication recommendations. The system aims to enhance the accuracy and efficiency of health recommendations, enabling users to manage their health proactively. Leveraging a rich dataset from Kaggle, it trains multiple machine learning models, including Naive Bayes, Random Forest, Gradient Boosting, Support Vector Machines (SVM), and K-Nearest Neighbors (KNN). While providing valuable guidance, the system acknowledges the limitations of its accuracy and the necessity of professional medical consultation. Employing a classification approach, Wellness Weaver predicts diseases based on user-input symptoms and incorporates speech synthesis and recognition features to improve user interaction. The system shows promise in delivering accurate predictions and appropriate medication suggestions, alongside personalized advice on diet, exercise routines, preventive measures, and drug interactions, offering a holistic health management approach. The findings indicate that Wellness Weaver serves as a valuable tool for personal well-being, delivering more precise and comprehensive recommendations than conventional medical chatbots. Its primary beneficiaries include individuals seeking proactive health management solutions, healthcare providers looking to enhance their digital services, and researchers interested in applying machine learning in the healthcare domain.

Keywords: Disease Prediction, Machine Learning, Health Recommendations, Personalized Medicine, Symptom Analysis, Wellness Management

Abstract 65: doi:65/3IMC24/FBCOE(W)

Giggle Learn (Mobile Educational App for Kids)

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In the recent past, there has been a succumbing increase in the incorporation of technology in the education sector meaning that the needs of young learners have not been fully met by this advancement in learning technologies due to their short attention span often accompanied by their curiosity. That is why conventional approaches to learning really learning which are based on the top-down approach, passive knowledge acquisition and memorization processes are not able to capture the interest of children. Also, many parents experience difficulties in coming up with appropriate, interesting, and colorful educational material that would be engaging for children of a certain age; often, the availability of good-quality educational items depends on the financial situation of the family. As for this project, it intends to create a new application based on artificial intelligence, which can create educational content, focused on kids. The application will allow parents and educators to control the generation of dynamic and various video content only using voice and text. Besides rationalizing the production of videos, the software enables the creation of appropriate and entertaining videos for children through programming. The user interface will be designed to fit in the two systems, the Android, and iOS with the Flutter. Voice recognition and natural language processing will input and analyze users' requests, whereas text-to-video synthesis with multimedia incorporation will generate enhanced videos. The backend for this app will use services from Google Cloud as well as Firebase for security of data and easy management of content. From this application, we want the parents and educators to be able to join their children in their learning process. The development approach that the project uses is Agile which means that it is constantly being updated based on the feedback being received. This project aims, by the use of AI and cloud features, to redefine the creation of educational content with a view of making high quality education available for all children around the globe.

Keywords: Artificial Intelligence (AI), Voice Recognition, Interactive Learning, Natural Language Processing (NLP), Flutter, Agile Development.

Abstract 66: doi:66/3IMC24/FBCOE(W)

Detection of Childhood Malnutrition using Machine Learning and Deep Learning Approaches

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Millions of children worldwide suffer from childhood malnutrition, which has long-term health effects. Pakistan bears an uneven burden of global malnutrition, with alarming rates of wasting, stunting, and micronutrient deficiencies affecting millions of children. It is considered as one of the contributing factors of death and multiple diseases. This study identifies malnutrition in under-five children and also finds the association of demographics, socioeconomic, health and nutrient factors that lead to malnutrition. The data is collected from respondents of Rawalpindi and Islamabad region of Pakistan and also from various data repositories. Machine learning and Deep Learning based data driven Classification and neural network (RNN and CNN) models are trained to classify a child as normal or malnourished. The highest accuracy achieved by the models is 93% by CNN and 90% by one of the classification models. A website is developed to dynamically interact with the trained models allowing users to select their preferred model and input data to assess a child's nutritional status. This user-friendly website enables parents and healthcare professionals to identify potential malnutrition cases and take proactive measures. Results reveal that out of the selected attributes residence, wealth index, parental education, child's age, height, breastfeeding history and chronic illnesses are strong predictors of malnutrition.

Keywords: Malnutrition, Machine Learning, Deep Learning, Classification Models, RNN, CNN

Abstract 67: doi:67/3IMC24/FBCOE(W)

Key Exchange Protocol Based on Tropical Algebra

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The application of tropical algebra to classical cryptography, particularly in enhancing the efficiency of a key exchange protocol originally proposed by Zeriouh et al. The protocol has been implemented using matrices over the tropical semiring (ZU), with tropical addition and multiplication utilized. These operations are generally more efficient than conventional matrix operations over a finite field Fq. One of the significant advantages of tropical cryptography is that solving linear systems of equations within the tropical framework is more complex than in the classical case, which can potentially improve the security of cryptographic protocols. Several examples have been provided, implemented using the computer algebra system ApCoCoA, to demonstrate the performance of the key exchange protocol within the framework of tropical algebra.

Keywords: Key Exchange, Cryptography, Block Matrix, Min-plus Algebra, Tropical Algebra

Abstract 68: doi:68/3IMC24/FBCOE(W)

Enhanced Digital Signature using Matrix Power Function

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Authenticity, integrity, and non-repudiation are ensured through a digital signature, where the recipient verifies the signature using the public key corresponding to the sender's private key, thus confirming both the signer's identity and the document's authenticity. A novel approach, modifying S. K. Rososhek's plan, is introduced, eliminating matrix inverses in favor of a matrix power function (MPF). The method selects matrices from GLm(Zn), the power matrices defined over a semi-ring and base matrices over a semi-group. A technique is presented to solve a matrix multivariate quadratic system of equations over a finite field, ensuring security. The matrix power function (MPF) acts as a one-way function, as its inversion requires solving an NP-complete multivariate quadratic problem. Several examples demonstrate the approach, and the computer algebra system "Applied Computations in Commutative Algebra" (ApCoCoA) includes the algorithms for calculating the MPF.

Keywords: Digital Signature, Matrix Power Function, Cryptography, ApCoCoA

Abstract 69: doi:69/3IMC24/FBCOE(W)

Cryptographic Primitive Construction Based on Enhanced Matrix Power Function

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A new enhanced matrix power function (MPF) is presented for the construction of cryptographic primitive. Sakalauskas & Luksys (2007) initiated the idea of Matrix Power Function (MPF) to establish symmetric ciphers. A matrix power function is an action of two matrices powering some base matrix on the left and right. The inversion equations of matrix power function, analogous to the matrix power function problem, are derived and have some structural similarity with equations of classical multivariate quadratic problem. The matrix power function problem seems to be more complicated unlike the multivariate quadratic problem, as its equations are not defined over the field, but are represented as left right action of two matrices defined over the platform semi-groups and in particular, over the Galois Field GF(pq). This research is about the proposal of key exchange protocol based on nonsymmetric and noncommuting algebraic structures, i.e GF(pq) and the presentation of preliminary security analysis. These results allow us to consider that the enhanced MPF can be a candidate one-way function, since the effective (polynomial-time) inversion algorithm for it is not yet known. Detailed examples of the application of the proposed Matrix power function for the Key Agreement Protocol is presented. Since the direct MPF value is computed adequately, the proposed MPF is suitable for the realization of cryptographic protocols in devices with restricted computation resources.

Keywords: Enhanced Matrix Power Function, Cryptography, Key Exchange protocol, Diffie-Hellman key exchange.

Abstract 70: doi:70/3IMC24/FBCOE(W)

A Synergistic Cryptographic Model: RSA Encryption Enhanced with LU Decomposition

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The development of innovative technology during the last few decades has drastically altered how people send and retain information via the Internet or networks. As a result, one of the most difficult issues is protecting this information from attackers. Many researchers and institutions recognized the value of cryptography in improving the efficiency and effectiveness of many areas of secure communication. There are many tenable ways of hiding the sensitive information from malicious person; however, RSA, the public key cryptography plays a significant role for great revolution in cryptosystem. Till now several modifications in RSA algorithm have been done to improve the security. In this paper, we proposed a synergistic encryption scheme based on RSA encryption and LU decomposition. The proposed scheme has two phases: The first step involves transforming the plaintext using LU decomposition. Following decomposition, the target elements for the lower triangle matrix are limited to the entries below the main diagonal, while the target entries for the upper triangular matrix are the eigenvalues and eigenvectors. These two phases of enhanced encryption method increase the complexity of the encryption scheme, which would require more time to break the proposed cipher and would make it extremely difficult for third-parties to attack, hence boosting security. The proposed method is also compared with RSA algorithms to demonstrate the potency of the proposed algorithm in terms of enhanced performance and security.

Keywords: RSA Cryptosystem, LU decomposition, Eigenvalue, Eigenvectors

Abstract 71: doi:71/3IMC24/FBCOE(W)

A Robust Hybrid Encryption Approach Combining Vigenère and Hill Ciphers with 95*95 **Table**

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The explosive rise of the Internet has increased familiarity with intrigue and ambiguity issues. Even though security is a major concern on the internet, many apps have been developed and designed without taking into account the most important aspects of data security, such as confidentiality, authentication, and protection. As our daily activities become more reliant on data networks, the need of recognizing such security challenges and risks will grow. To prevent any undesired customers or individuals from gaining access to the data, cryptography is essential. Early encryption methods, such as mono-alphabetic substitution encryption laid the groundwork but ultimately proved vulnerable to different attacks, notably statistical attacks. The Vigenère cipher is a well-known cryptographic algorithm used to prevent attackers from accessing raw data during transmission. The classic vigenere cipher encrypts only the alphabetic plaintext using a 26×26 vigenere table. In our research we used the extended vigenere table which has 95 rows and 95 columns including English alphabets, characters, mathematical symbols, digits, and punctuations. In this paper, the encryption algorithm made with the fusion of modified Vigenere and Hill cipher using the 95×95 vigenere table. This cohesion between these two methods and extended table will provide us a reliable encryption algorithm, resistant to varying attacks, including statistical attacks. By fortifying encryption against potential breaches, we aim to address the ever-evolving landscape of cyber security threats. This approach not only safeguards against statistical attacks but also provides a foundation for resilience in the face of diverse threats. The significance of advanced encryption methods is really high as technology gets better and cyber threats get more dangerous. Additionally, the hybridization of encryption methods allows for customization and adaptation to specific use cases, providing flexibility and scalability in securing digital data.

Keywords: Vigenere Cipher, Hill Cipher, Hybrid Encryption, Substitution cipher, Text Encryption

Abstract 72: doi:72/3IMC24/FBCOE(W)

Computational Analysis of Data-Driven Solutions for the Convection-Diffusion-Reaction Equation Using Physics Informed Neural Networks (PINNs)

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In this paper, we present a computational analysis of data-driven solutions of the convection-diffusion-reaction (CDR) equation using Physics Informed Neural Networks (PINNs). PINNs enforce laws of physics when solving non-linear partial differential equations that govern physical dynamics. The PINN technique for solving boundary value problems in partial differential equations is presented as an alternative to available numerical techniques. Three model initial-boundary value problems are implemented through MATLAB using the presented technique. The computed numerical solutions of these model problems are compared with the actual solution to observe the accuracy of the numerical implementation. It is noted that the predicted solution in the case of these model problems through PINNs is in strong agreement with the corresponding exact solution. The analysis of the presented algorithm is performed to observe what changes in the accuracy of the solution when the number of neurons and the number of layers working within the neural network structure are altered. Moreover, the impact of the number of training data points and collocation points on the model's accuracy is also presented to develop a better understanding of the algorithm. It is observed that the presented method is capable of efficiently computing numerical solutions of boundary value problems in PDEs and has the potential to solve a large number of related problems that arise in engineering physics.

Keywords: Convection-Diffusion-Reaction Equation, Physics Informed Neural Networks (PINNs), Boundary Value Problems, Partial Differential Equations (PDEs), Numerical Solutions, Neural Network Structure.

Abstract 73: doi:73/3IMC24/FBCOE(W)

Comparative Analysis of Singular Value Decomposition and Principal Component Analysis for Image Compression

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Image compression is an application of data compression that reduces the size of original image with a few bits. The image compression is the technique which can reduce the size of the image without compromising the quality of the image. This research investigates the application of singular value decomposition (SVD) and principal component analysis (PCA) for image compression. Both SVD and PCA are powerful data science techniques known for their dimensionality reduction capabilities. SVD decomposes an image matrix into three simpler matrices, revealing the intrinsic structure of the data. By retaining only the most significant singular values, it effectively compresses the image, reducing storage requirements while maintaining visual quality. PCA, closely related to SVD, transforms image data into a set of orthogonal components ordered by their variance. This transformation reduces dimensionality, emphasizing the most critical features and enabling efficient data representation and compression. We applied SVD and PCA to a dataset comprising various high-resolution images. The compression process involved transforming the images into lower-dimensional representations and reconstructing them using a reduced number of components. This study evaluates the comparative effectiveness of SVD and PCA in terms of mean square error (MSE) and Peak signal to noise ratio (PSNR). The results demonstrate that SVD is more efficient than PCA as evidenced by the MSE and PSNR values obtained. SVD achieved an MSE and PSNR as 0.9135 and 48.52 respectively. PCA achieved an MSE and PSNR 1.053 and 47.90 respectively. These findings indicate that SVD provides better reconstruction accuracy and preserves more information from the original data, making it a superior choice for applications requiring high-quality data compression and dimensionality reduction. The research also discussed the importance of Singular Values Rank and Cumulative Sum Graphs.

Keywords: Image Compression, Singular Value Decomposition (SVD), Principal Component Analysis (PCA), Dimensionality Reduction, Mean Square Error (MSE), Peak Signal-to-Noise Ratio (PSNR).

Abstract 74: doi:74/3IMC24/FBCOE(W)

A Review of Ambiguity Resolution Techniques for Enhancing Attitude Angle Determination Using Carrier Phase Measurements

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In the field of navigation and positioning, accurate determination of attitude angles plays a pivotal role in various applications such as aerospace engineering, robotics, and autonomous navigation systems. Carrier phase measurements from Global Navigation Satellite Systems (GNSS) provide a precise means for estimating attitude angles. Ambiguity resolution techniques play a crucial role in enhancing the accuracy of these estimations. This review paper provides a comprehensive overview and comparative analysis of different ambiguity resolution techniques employed for enhancing the accuracy of attitude angle determination using carrier phase measurements. The paper discusses the theoretical foundations and operational principles of several ambiguity resolution methods, including ARCE (Ambiguity Resolution with Constraint Equation method), LAMBDA (the unconstrained LAMBDA method), CLAMBDA (constrained LAMBDA), MC-LAMBDA (Multivariate constrained LAMBDA),, LAMBDA-BV (the baseline validated LAMBDA method), LAMBDA-BC (baseline constrained LAMBDA method), TCAR (Triple Carrier Ambiguity Resolution), and LSAST (Least-Squares Ambiguity Solution Technique). Each technique's strengths, weaknesses, and applicability in different scenarios are analyzed and compared. Through a systematic review of existing literature and empirical studies, this paper examines the performance of various ambiguity resolution techniques in terms of accuracy, convergence time, computational complexity, and robustness to signal anomalies. Special attention is given to factors such as satellite geometry, signal obstructions, and multipath effects, which can significantly influence attitude angle estimation accuracy. This comprehensive review contributes to valuable insights into the strengths and limitations of various ambiguity resolution techniques in the context of attitude angle determination using carrier phase measurements. Practical recommendations are provided for selecting the most suitable ambiguity resolution approach based on specific application requirements and environmental conditions. Ultimately, this review contributes to advancing the field of navigation and positioning by facilitating improved accuracy in attitude angle determination through effective ambiguity resolution techniques.

Keywords: Ambiguity Resolution, Attitude Angle Determination, Carrier Phase Measurements, Global Navigation Satellite Systems (GNSS), Navigation and Positioning, Signal Anomalies.

Abstract 75: doi:75/3IMC24/FBCOE(W)

Behaviour of Hausdroff Operator on Weighted CBMO HERZ Space and P-ADIC Space

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In this article, we study the commutators of Hausdorff operators and proved their boundedness on the Heisenberg group in the setting of the Herz space and p-adic. The study of Hausdorff operator on p-adic function spaces is solely due to Volosivets. The matrix Hausdorff operators defined on n-dimensional Euclidean space Rn in the following form:

$$\boldsymbol{H_{\emptyset,A}f(x) = \int_{R^n} \emptyset(t) f(A(t)x)dt, \quad x \in R^n}$$

We obtained the study of the Hausdorff operator on p-adic function spaces of power weighted type, such as Lebesgue spaces, and Herz type spaces. Furthermore, we also discuss the sharpness of our results, given certain conditions on the norm of the matrix A. The results are significant because, given a diagonal matrix A(t) and a suitable choice of f, reduces to the p-adic Hardy-Littlewood operator and the p-adic modified Hardy operator.With the help of Matrix Hausdorff Operator, we have to prove the sharp boundedness of p-adic space as provided in the theorems.

Keywords: Hausdorff operator, boundedness, p-adic function spaces, Herz space, CBMO function.

Abstract 76: doi:76/3IMC24/FBCOE(W)

Some Weighted Inequalities for Hausdorff Operators and Commutators on Morrey-Herz Spaces

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Hausdorff operators and commutators play essential roles in understanding the behavior of functions within Morrey Herz spaces. In this research, we study the boundedness of Hausdorff operators within the framework of weighted central Morrey spaces, extending the understanding of these function spaces and their interaction with operator theory. By investigating the behavior of Hausdorff operators under various weight functions, we provide sharp bounds for power-weighted central Morrey spaces, thereby enhancing the existing theory on operator behavior in function spaces. The n-dimensional Hausdorff operator can be expressed as follows

$$H_{\phi,A}f(x) = \int_{R_n} \left(\frac{\phi(y)}{|y|^n}\right) \text{f(A(y)x)}\ \text{dy}$$

where A(y) is an n × n matrix satisfying non-singularity conditions almost everywhere in the support of a fixed integrable function ϕ.This research explores how Hausdorff operators and symbol functions interact in spaces with weights, revealing how these operators are estimated with weights. By studying Morrey Herz spaces, it enhances our understanding of operators and commutators in function spaces with different weightings and structures. Overall, this study makes important contributions to the field of operator theory in function spaces. The boundedness of n-dimensional Hausdorff operators given by;

$$\left\|H_{\phi,A}f\right\|_{M\dot{q}_2,\lambda(R^n;w)} \preceq K_1\|f\|_{M\dot{q}_1,\lambda(R^n;w)}$$

if the constant K_1;

$$K_1 = \left(\int_{R^n} \frac{\phi(y)}{|y|^n}\|A(y)\|_{M^{p,\lambda}}\,dy\right) + \left(\int_{R^n} \frac{\phi(y)}{|y|^n}\|A(y)\|_{M^{p,\lambda}}\|A(y)\|H^{q^\delta}\,dy\right)$$

.

Keywords: Hausdorff Operators, Commutators, Morey Spaces, Herz Spaces, Weighted Central Morey-Herz spaces, boundedness of operators and commutators.

Poster 01

Data Analysis and Visuals

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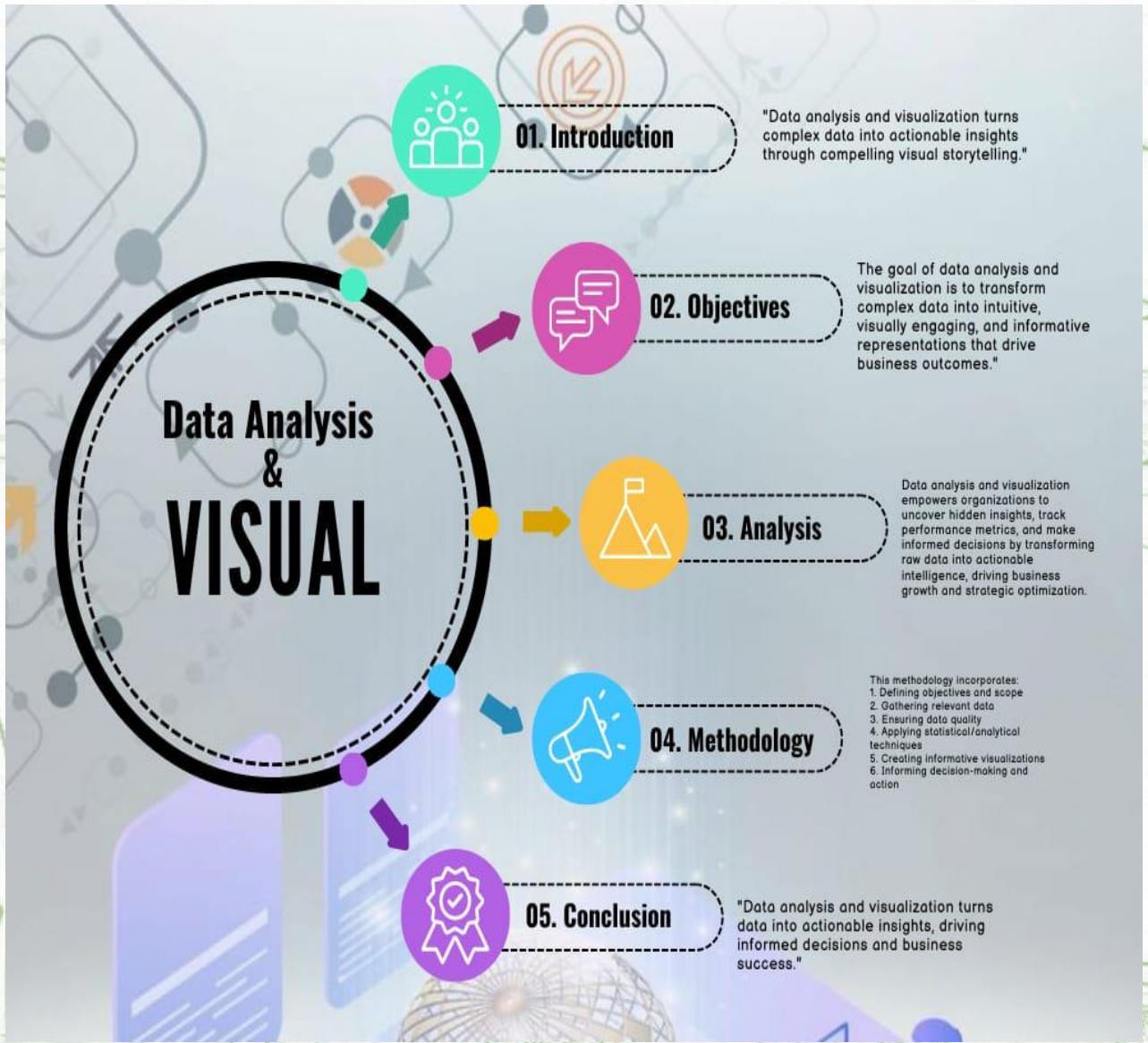

Poster 02

AI in Mathematics

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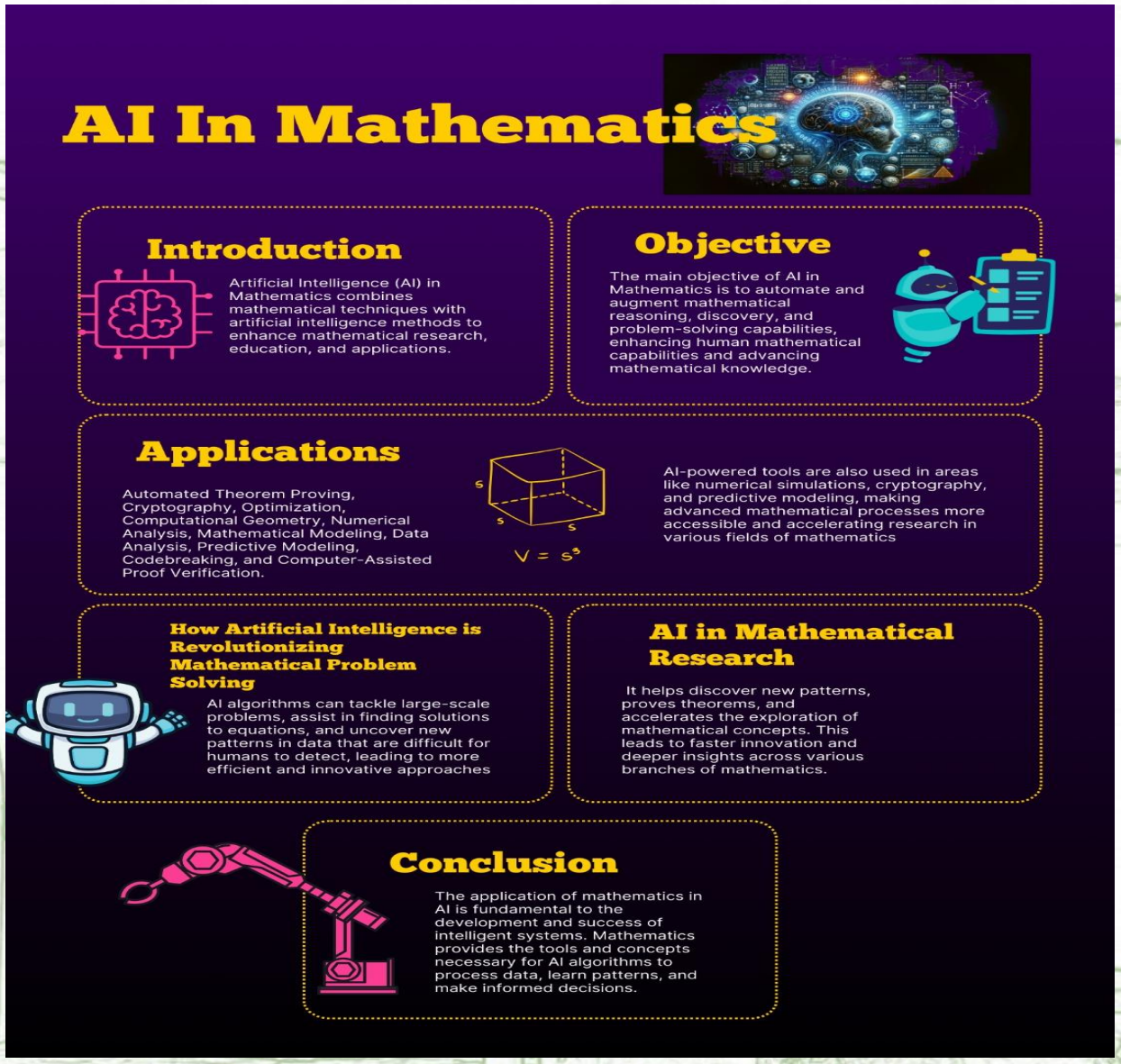

Poster 03

Mathematics for Sustainable Future

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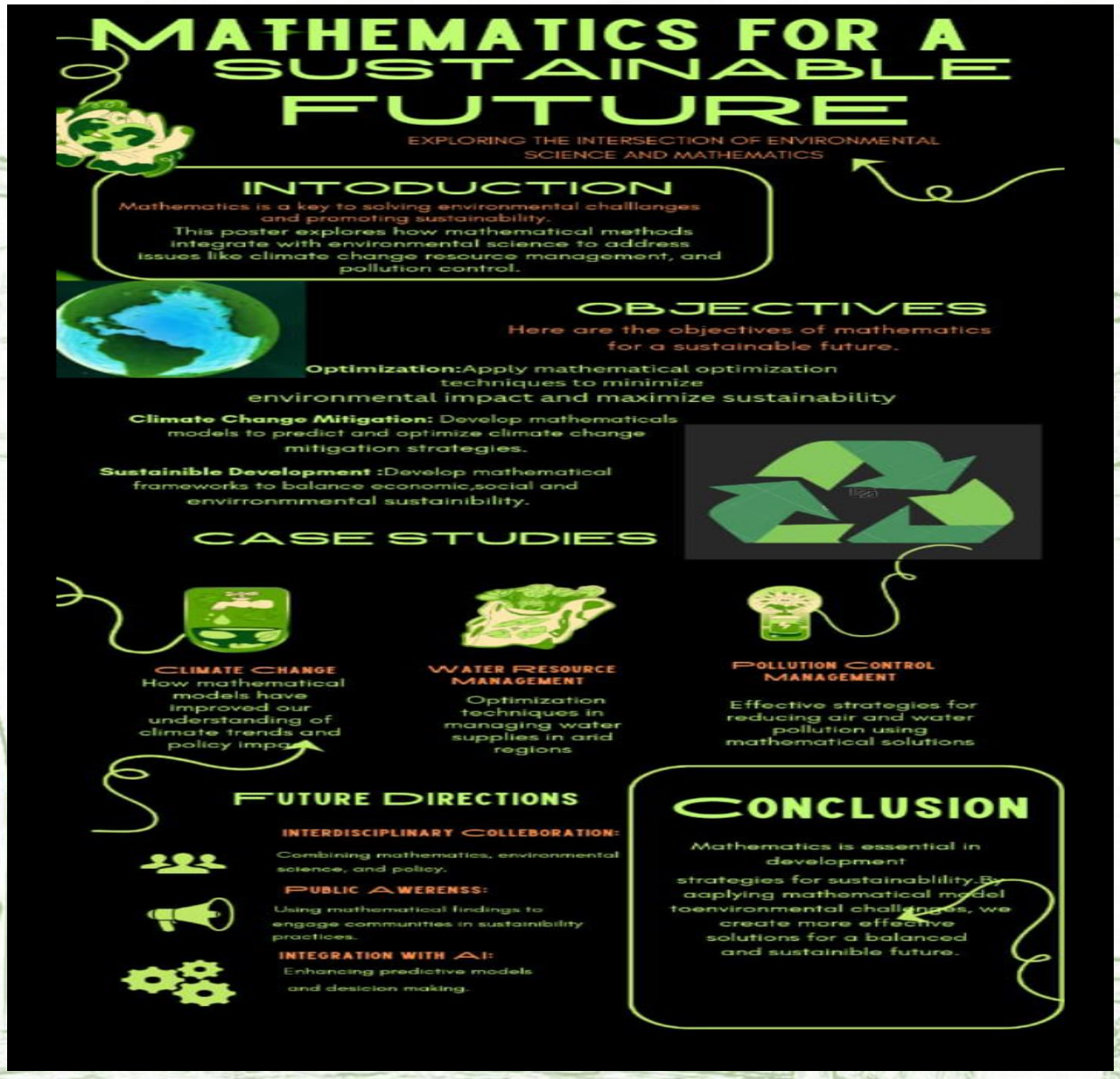

Poster 04

Mathematics in Agriculture

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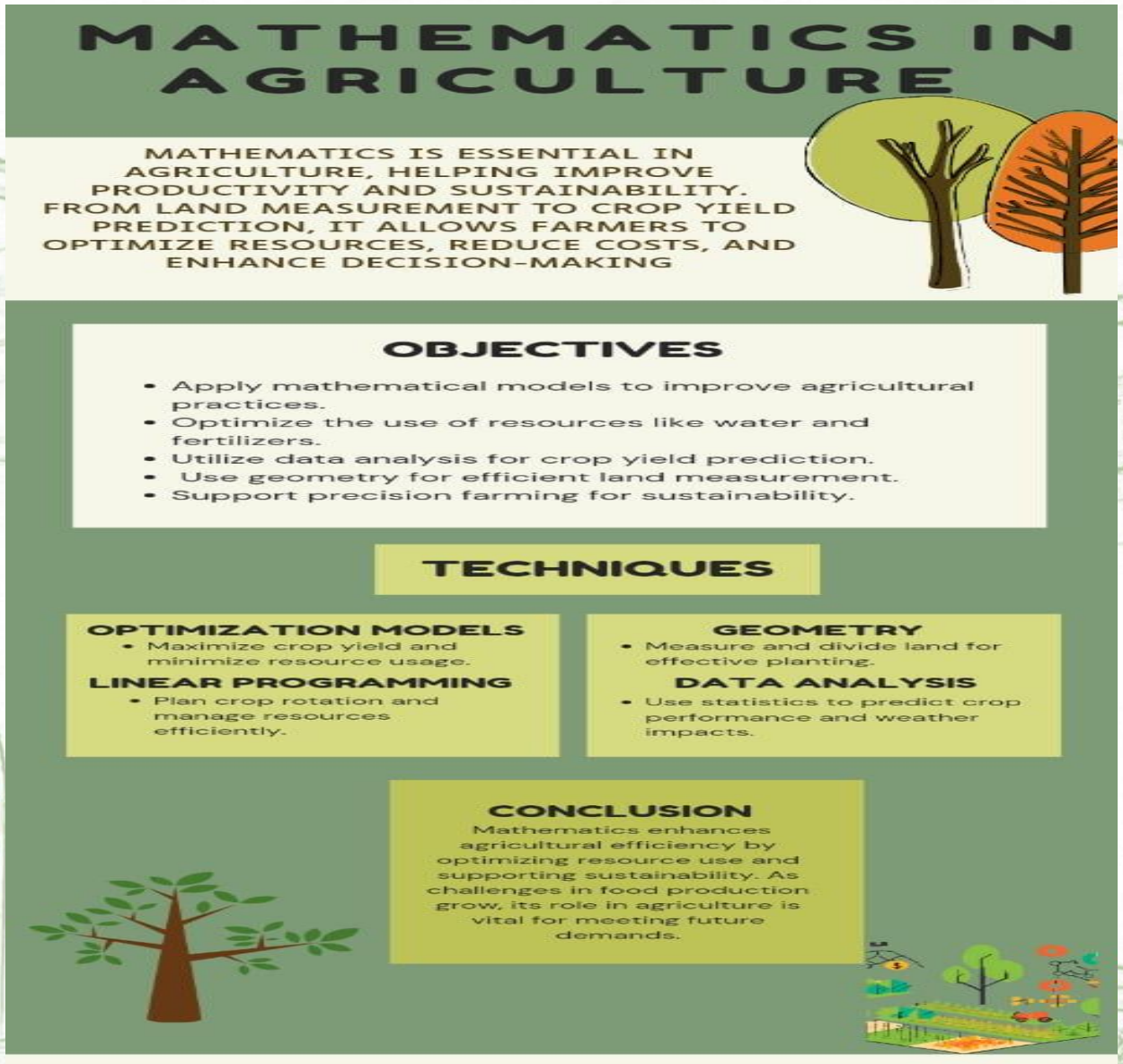

Poster 05

Data Science

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Poster 06

Cosmic Topology

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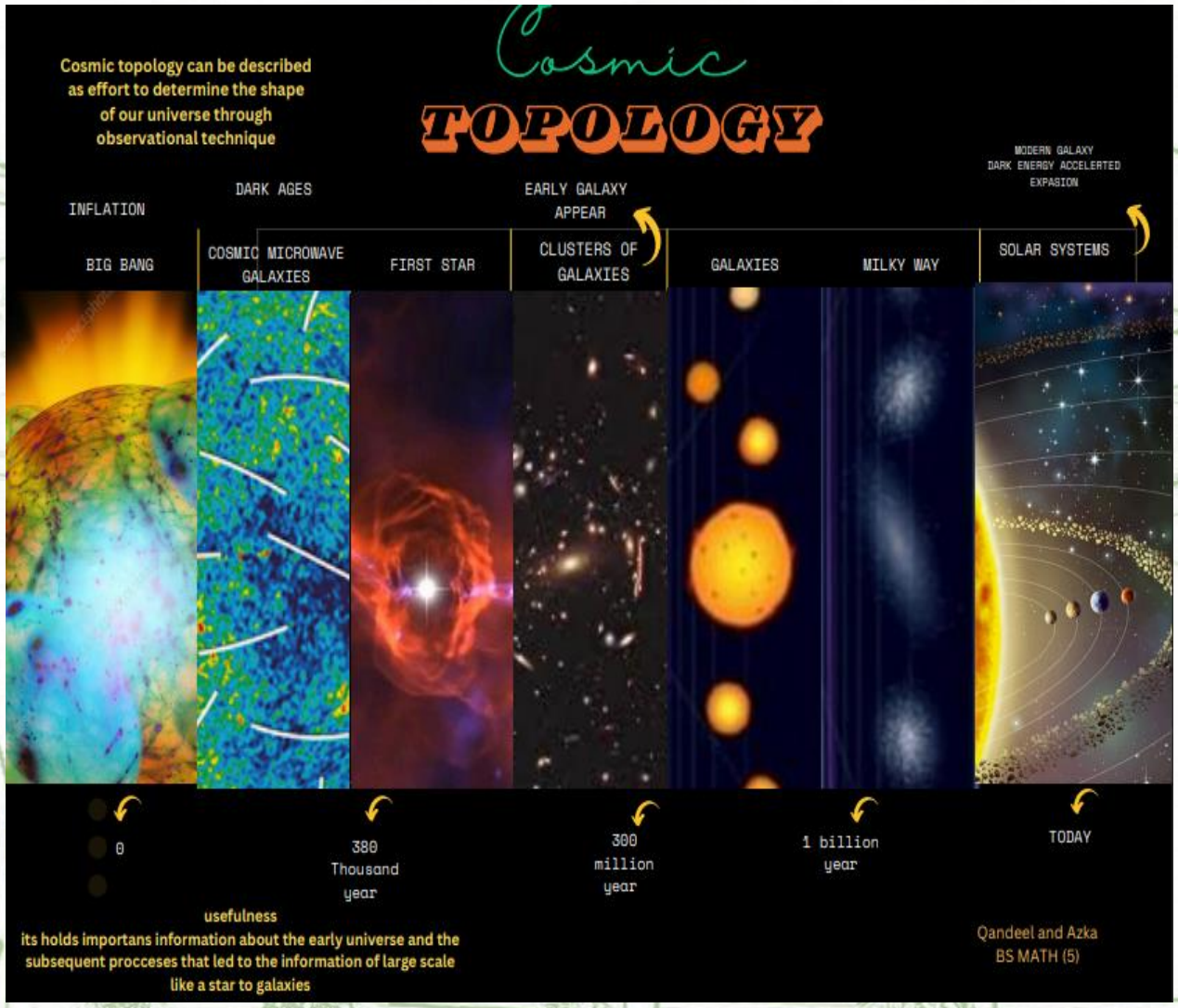

Poster 07

Topology and Robot Motion Planning

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Poster 08

Artificial Intelligence in Agriculture

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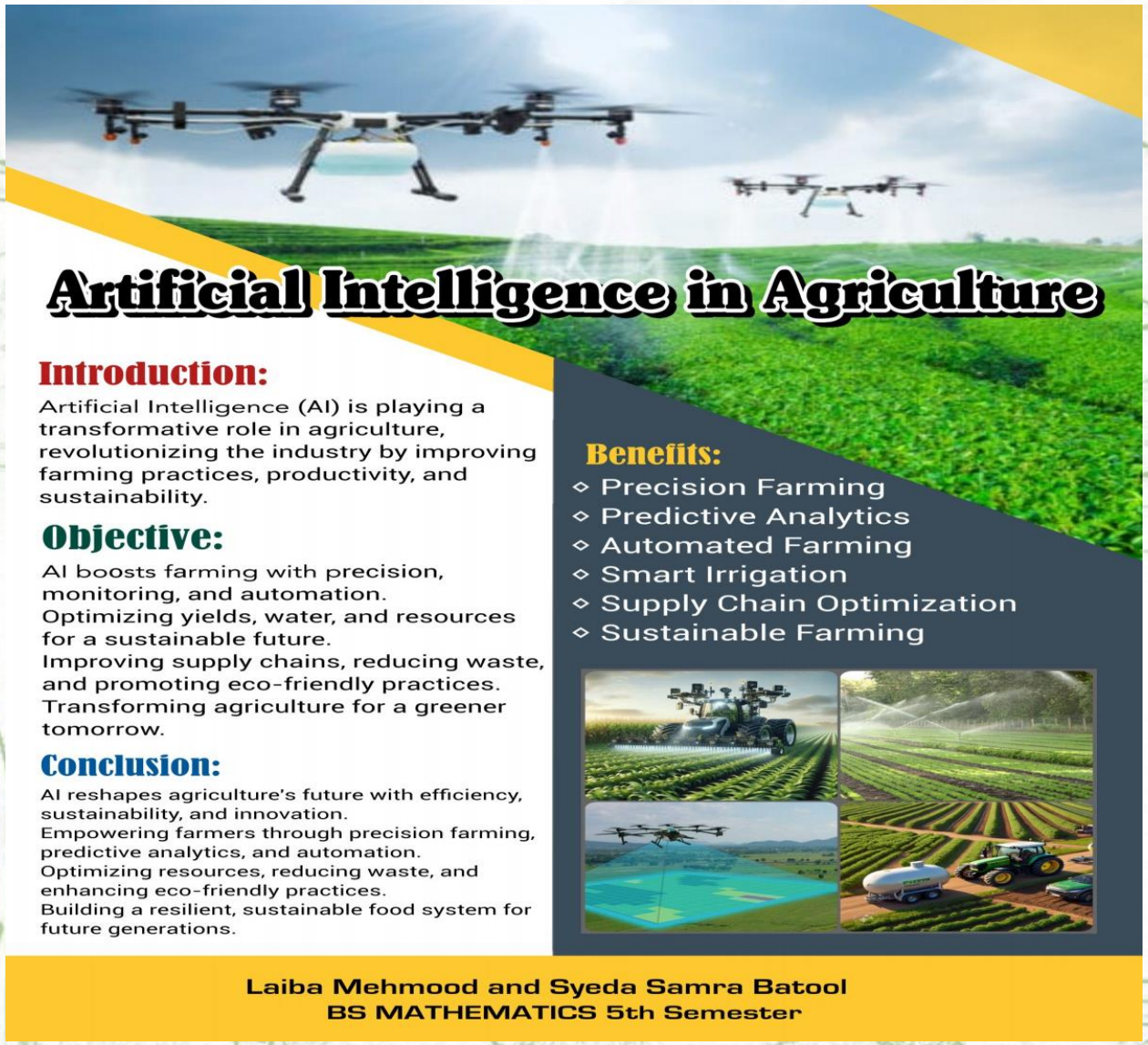

Poster 09

Climate Change: The AI Solution

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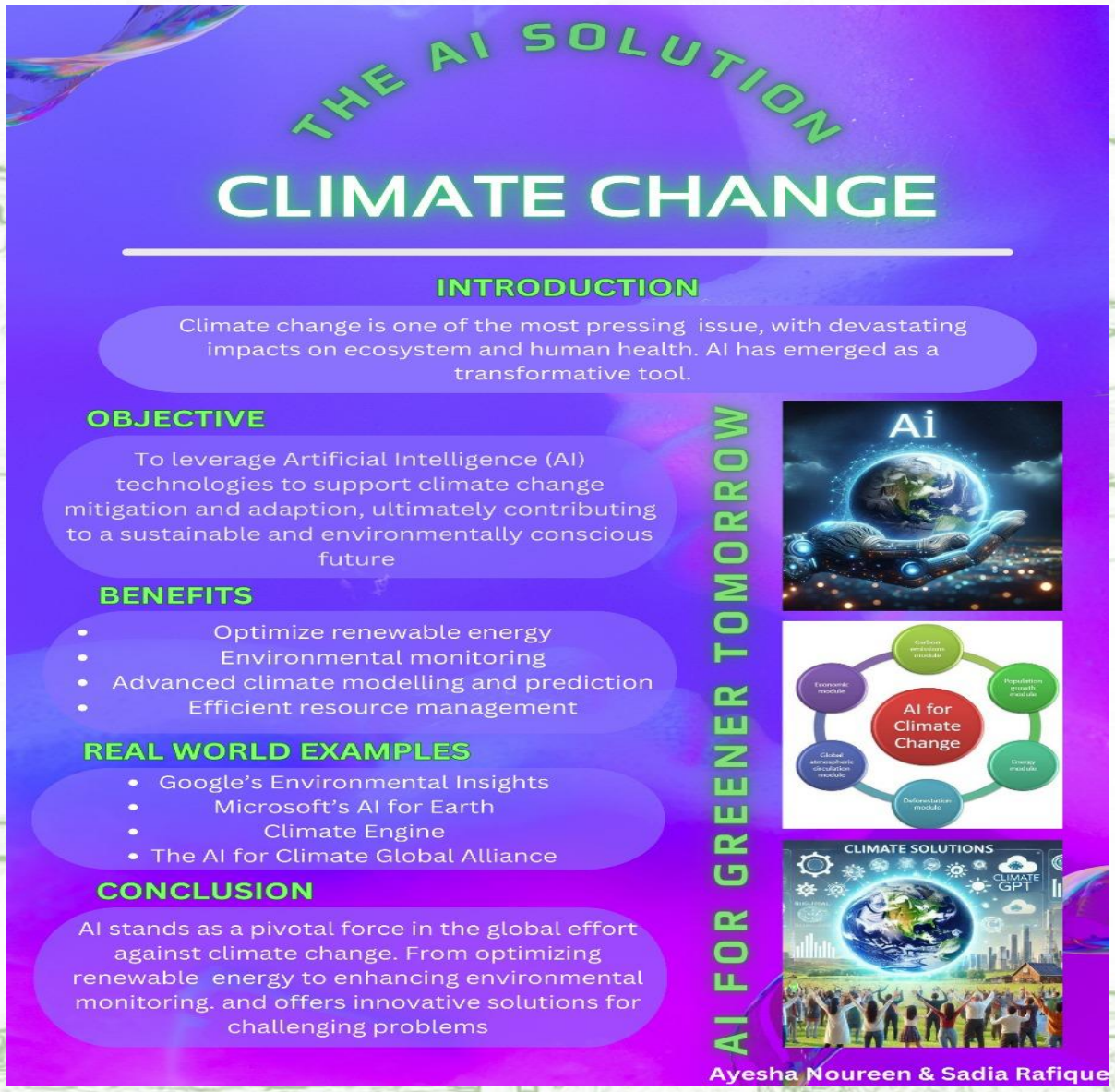

Poster 10

Network Topology and Communication System

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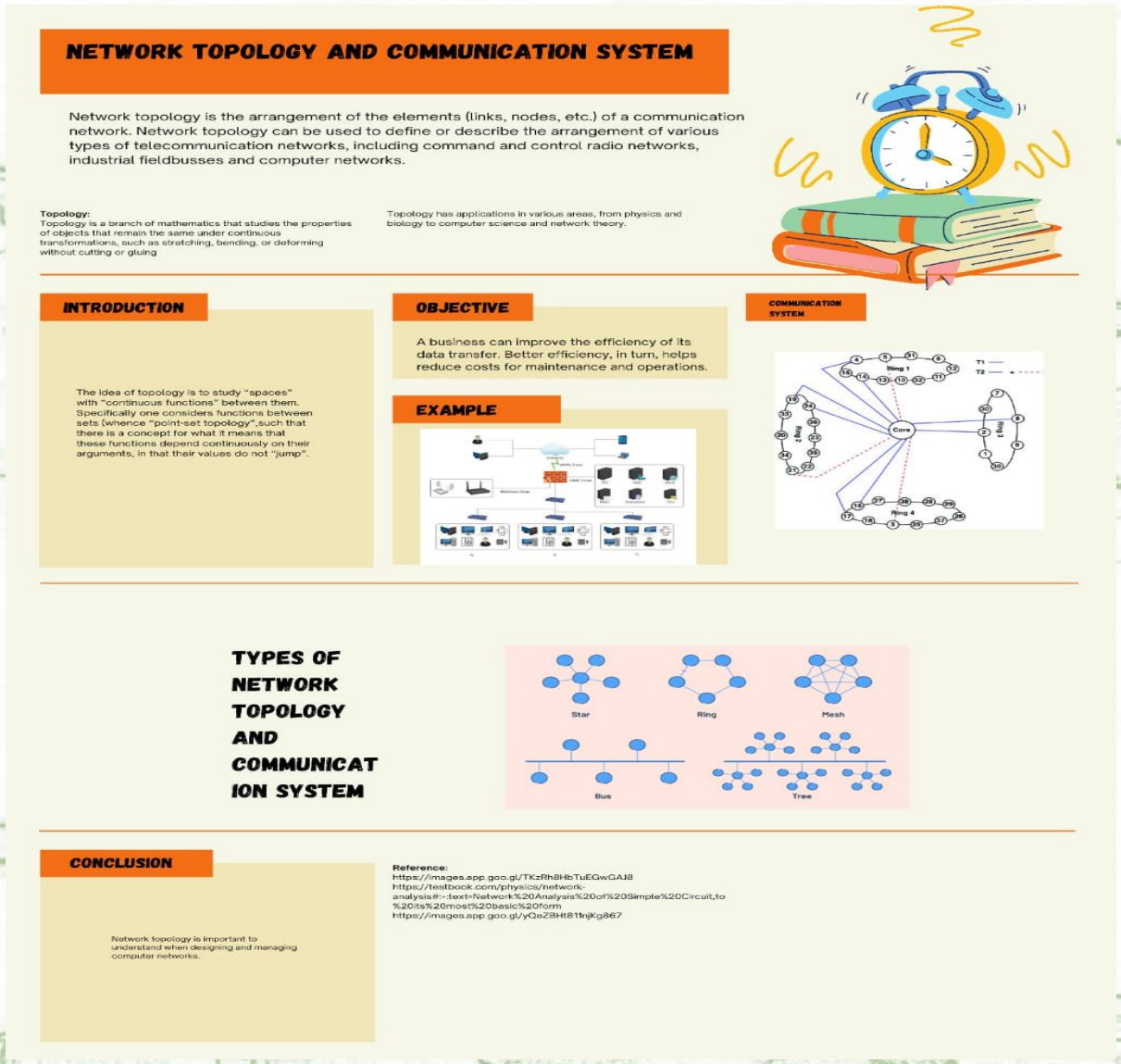

CONFERENCE HIGHLIGHTS

The 3rd International Multidisciplinary Conference 2024 was successfully held at Fazaia Bilquis College of Education for Women PAF Nur Khan Rawalpindi on 3rd October 2024, with the theme "Integrating Innovation and Sustainability across Disciplines". The event brought together prominent scholars and researchers from around the world to discuss the fusion of innovation and sustainability across various fields. The day began with the Inaugural Session, where the Principal of FBCOE(W), welcomed the attendees. The keynote speakers addressed critical issues ranging from sustainable development to artificial intelligence, delivering thought-provoking presentations. The event hosted a total of 85 presentations, contributing to the overarching theme of sustainable research, highlighting innovative methods, cultural discourse, and practical implications across diverse fields. The Plenary Sessions followed in the afternoon. The first session, focused on "Innovation and Advancement in Artificial Intelligence", while the second session, highlighted "Sowing the Seeds of Sustainability in Early Years." The conference concluded with a certificate award ceremony, group photo, and closing remarks, highlighting the importance of interdisciplinary collaboration for sustainable progress.