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Proceedings of the Business Information Systems Student Symposium 2026

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Agenda

Time	Activity
12.45pm - 1.00pm	Arrival of guest and Registration
1.00pm - 1.05pm	Commencing the event
1.05pm - 1.10pm	Welcome speech by symposium chair Mr. Kavinga Elamulla
1.150pm - 1.15pm	Speech by Head of the Department Prof. Lasith Gunawardena
1.15pm - 1.45pm	Keynote speech by Prof. Nalin Arachchilage *"Security and Privacy Engineering for Critical Infrastructure: Why it matters and How to Get Right"*
1.45pm - 1.50pm	Launching the Proceeding Book of the Symposium
1.50pm - 2.20pm	Keynote speech by Mr. Dinidu Hewage *"Designing Tech that Serves a Nation: Lessons from CROPIX"*
2.20pm - 4.10pm	Information Systems related Research Presentation and Q&A (E315)
	Information Systems Development Project Presentation and Q&A (E111)
4.10pm - 4.30pm	Tea Break
4.30pm - 5.15pm	Panel Discussion – *"Leading Digital Transformation: What Future Tech Leaders Need to know about Strategy, Challenges, & AI"*
5.15pm - 5.30pm	Announcing winners and awards ceremony
5.30pm - 5.35pm	Token of appreciation
5.35pm - 5.40pm	Vote of thanks by symposium co-secretary Ms. Dulari Perera

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Information Systems related Research Abstract

From Trust to Betrayal: An Experimental Study on the Vulnerabilities and Factors Influencing Elderly Populations' Responses to Online Scams in Colombo, Sri Lanka

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Abstract

The rapid growth of digital communication and online financial services has elevated exposure to cyber facilitated fraud, particularly among elderly individuals who often face digital, cognitive and social vulnerabilities. Although previous research has explored the impacts of online scams, many studies rely on retrospective self-reports which provide minimal understanding of how elderly individuals make their decisions at the moment of scam exposure. This study addresses the gap by examining real time responses to online scams and the psychological and social factors that influence engagement and ignoring behaviors. An exploratory qualitative field experiment was conducted in the Colombo District of Sri Lanka, where elderly individuals use mobile phones and social media platform in their day today lives. A simulated investment scam containing institutional authority cues was shared via WhatsApp to reflect common scamming scenarios. Ten individuals aged 60 years and above were exposed to a message in their everyday digital environment, then followed by a debriefing session, informed consent and post semi structured interviews. Interview data were analyzed thematically to identify patterns in reasoning, emotional reactions and social influences. The findings show that engagement with the scam was attributed to low digital confidence, strong trust in authority cues, emotional vulnerability and limited opportunities for immediate social advice. In opposition, avoidance behavior was attributed to identifying red flags such as unknown sender details, poor message quality and urgency cues as well as prior exposure to scam awareness through loved ones or media. By examining responses close to the point of exposure, this study provides practical insights into how elderly individuals analyze and respond to online scams, informing the development of context sensitive and specific digital fraud prevention strategies.

Keywords: *Digital safety awareness, Elderly individuals, Online scams, Qualitative field experiment, Scam vulnerability*

Challenges in Cloud Adoption among SMEs in the Western Province of Sri Lanka

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Abstract

This study examines the key challenges constraining Small and Medium Enterprises (SMEs) in the Western Province of Sri Lanka in adopting cloud computing, focusing on the primary barriers encountered, the influence of organizational readiness, and differences from other developed countries. Guided by an interpretivist paradigm, a qualitative approach was employed to gain in-depth insights from individuals directly involved in cloud-related decision-making. Data were collected through semi-structured interviews with nine SME representatives and four cloud industry experts, and thematic analysis was used to identify common themes and patterns. The findings reveal that cloud adoption among Sri Lankan SMEs is hindered by limited technical knowledge, concerns over data security and privacy, high implementation and operational costs, and inadequate technological infrastructure. Internal organizational factors, including leadership involvement, employee digital competencies, and the availability of financial and technical resources, significantly influence organizational readiness and adoption decisions. In addition, context-specific challenges such as language barriers, regulatory uncertainty regarding data protection policies, and weak collaboration between SMEs and cloud service providers further distinguish the Sri Lankan experience from that of more developed countries. The study enhances understanding of cloud adoption challenges in a developing country context and offers practical implications for policymakers to design supportive regulatory frameworks, for SMEs to strengthen leadership and digital capabilities, and for cloud providers to deliver tailored training and collaborative solutions. However, the study is limited to a single province, which may restrict transferability, and future research could expand to other regions and adopt mixed-method approaches to enable broader comparative insights.

Keywords: *cloud adoption, digital transformation, small and medium enterprises*

The Impact of AI Tools on Project Communication in Sri Lankan Software Projects: A Qualitative Study

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Abstract

This study investigates the impact of Artificial Intelligence (AI) tools on project communication within software development environments. With communication recognized as a critical success factor in software projects, the research explores how AI tools enhance, modify, or challenge traditional communication processes. This study is theoretically grounded in Adaptive Structuration Theory, Media Richness Theory, Social Penetration Theory, and AI Governance Frameworks to explore the impact of AI tools on project communication in software projects. A qualitative research methodology was employed, involving eight semi-structured interviews with professionals from Sri Lankan software companies. The data were transcribed using the Riverside AI tool, reviewed for accuracy, and analyzed through thematic analysis using Braun and Clarke's framework. QDA Miner Lite was used for systematic coding. Six key themes emerged: Efficiency and Timesaving; Enhanced Clarity and Standardization; Tool Limitations and Dependency Risks; Privacy, Ethics, and Governance; Bridging Cross-Functional Roles; and Adoption Barriers and Cultural Resistance. AI tools improved communication speed and accessibility, but also raised concerns about data security, overreliance, and contextual misinterpretation. The findings contribute to academic discourse by emphasizing communication, not just automation, as a central domain of AI impact in project environments. They also introduce a conceptual map that illustrates the relationship between AI tools, 6 themes, and project communication outcomes in software projects. The findings provide practical guidance for software organizations and project managers on responsibly selecting, governing, and contextualizing AI communication tools to improve coordination, inclusivity, and adoption. The study's qualitative scope limits generalizability. Future research could expand with mixed method approaches or explore AI's communication impact in cross-cultural or multilingual teams.

Keywords: *Artificial Intelligence, Software projects, Software development, Project communication; Thematic analysis*

An Exploratory Study of Agile Methodologies and Software Project Success in Sri Lanka: Evidence from SCRUM and KANBAN

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Abstract

This paper discusses the use of Scrum and Kanban approaches in the IT sector in Sri Lanka to optimize the success of software projects, in terms of process efficiency and quality of the products, adoption, and the main benefits and limitations of the two methodologies. The qualitative exploratory research design was used (semi-structured interviews with Agile professionals of Colombo IT companies). The data gathered were examined by applying thematic analysis, which revealed some patterns and insights on the Agile practices and the impact they have on the performance of a project. The results show that Scrum is important to better planning and alignment of stakeholders and faster delivery, whereas Kanban helps to enhance the visibility of the workflow and flexibility. The two methodologies together foster improvement of outcomes of a project on time, scope, and quality. To analyze the efficiency of processes and sustainable product quality, the Iron Triangle (time, cost, scope) and ISO/IEC 25010 quality model are used to analyze the findings. Nevertheless, other constraints on the accomplishment of Agile benefits, including lack of adequate training, ineffective tools, and role description are also noted in the research. The work brings a lot of useful information to the discourse about Agile practices in creating situations, which makes it give useful recommendations on enhancing Agile maturity and implementation in a project environment to enhance the general performance. Even though it offers its contributions, the study has certain limitations in the limited sample size that is limited only to Colombo and in the fact that it is concentrated on the frameworks of Scrum and Kanban. Another area of future research involves expanding the study to incorporate regional views, larger sample, and mixed methods to give a more holistic picture regarding Agile adoption and its influence on the IT sector of Sri Lanka.

Keywords: *Agile methodology, Software projects, Scrum, Kanban, Project Success*

Factors Influencing Performance and Satisfaction in Learning Business Analytics among Sri Lankan Undergraduates

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Abstract

Business Analytics (BA) has become a vital area within higher education as organizations increasingly depend on data-driven decision-making processes. Previous research indicates that students' academic performance and satisfaction in BA programs are influenced by multiple interconnected factors, including course design, personal motivation, perceived career relevance, and self-efficacy. However, many existing studies tend to examine these factors separately, without fully exploring how they collectively shape the overall learning experience. In developing contexts such as Sri Lanka, concerns persist regarding whether graduates are adequately prepared to apply analytical knowledge in professional settings. In response, this study investigates the key factors affecting undergraduate students' academic performance and satisfaction in learning Business Analytics, with particular attention to the roles of self-efficacy, personal interest, perceived career relevance, and perceived effectiveness of course structure, as well as their impact on learning effort. A quantitative, cross-sectional research design was employed, using a structured online questionnaire administered to 120 undergraduates from UGC-approved universities in the Western Province of Sri Lanka. The conceptual framework was developed by integrating constructs from established technology adoption and motivation theories. Data was analyzed using Partial Least Squares Structural Equation Modeling through SmartPLS software. The findings reveal that self-efficacy significantly strengthens learning effort, which in turn positively affects academic performance. Perceived course structure effectiveness also demonstrates a strong direct influence on both performance and satisfaction. In contrast, personal interest and perceived career relevance do not show a significant effect on learning effort, and learning effort does not significantly predict student satisfaction. These results emphasize the critical importance of well-structured course design and learner confidence in enhancing educational outcomes, while acknowledging limitations related to the cross-sectional design and geographically limited sample.

Keywords: *Business Analytics Education, Learning Effort, Academic Performance, Satisfaction, Sri Lankan Undergraduates*

Comparative Analysis of Requirements Elicitation Techniques used in Software Industry in Sri Lanka

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Abstract

This study examines the requirements elicitation techniques practiced in the Sri Lankan software industry and analyzes their associated benefits and challenges, highlighting the critical importance of effective elicitation in software development, where unclear or incomplete requirements can lead to costly rework, delays, or project failure. A qualitative research approach was adopted, using semi-structured interviews with business analysts from software companies in the Colombo district, representing the broader Sri Lankan software sector. The collected data were analyzed using thematic analysis to identify recurring patterns and key insights. The findings indicate that a variety of elicitation techniques, including interviews, document analysis, workshops, brainstorming, prototyping, and observation, are widely applied in practice. While many of these techniques align with internationally recognized standards, certain practices, particularly document analysis and change request handling, demonstrate contextual adaptations influenced by organizational culture, stakeholder behavior, and project environments. The results further reveal that each elicitation technique presents distinct strengths and limitations, confirming that no single method is universally effective and that appropriate selection depends on project characteristics, stakeholder needs, communication settings, and organizational processes. The study also highlights that accurate, structured, and context-aware elicitation significantly contributes to project success by improving clarity, reducing misunderstandings, and ensuring a shared understanding of user requirements. This study explores real-world requirements elicitation in a developing country, offering practical and theoretical insights. Despite limited generalizability, it recommends future research on AI-supported tools and mixed-method approaches for broader validation.

Keywords: *Requirements Elicitation, Elicitation Techniques, Comparative Analysis, Software Industry*

Information Systems Development Research Projects Abstracts

Design of Chatbot Web Interface for the Department of IT based on RAG Technology using LLM Models

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Abstract

This research project presents the design and evaluation of a Retrieval-Augmented Generation (RAG) chatbot developed for the Department of IT in a university. The primary objective is to automate and enhance the dissemination of academic information, addressing the shortcomings of existing static websites and email-based support systems. Traditional systems often prove inefficient users struggle to locate relevant information, content becomes outdated, interactivity is limited, and information overload leads to user frustration and increased staff workload. To resolve these challenges, a RAG-based chatbot was developed by integrating two states of the art Large Language Models (LLMs): GPT 4.0 and Gemini 1.5 Pro. The system delivers accurate, contextually relevant responses from a curated IT knowledge base through an intuitive user interface. The chatbot was designed following a Design Science Research (DSR) methodology, involving iterative cycles of design, development, and evaluation. The core technologies employed include Python, the LangChain framework for the RAG pipeline, and a FAISS vector store for efficient semantic search. Performance evaluation was conducted using a test set of 20 questions reviewed by domain experts. The results indicated that GPT-4.0 achieved higher accuracy and precision (average score of 4.60/5), while Gemini 1.5 Pro demonstrated superior response speed (3.28s vs. 4.29s). Overall, the study validates the feasibility of deploying RAG-based architectures in academic IT support environments and highlights valuable insights into optimizing multiple LLMs to balance response quality and speed.

Keywords: *Retrieval-Augmented Generation, Chatbot, Large Language Models, GPT-4, Gemini, Academic Support, Semantic Search*

AI Based Career Pathway Recommendation System for IT Undergraduates

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Abstract

Many IT undergraduates in Sri Lanka face challenges in selecting career pathways that align with their skills, interests, and academic backgrounds. Existing career guidance services are often generic, lack personalization, and fail to reflect the evolving local IT job market. This research aimed to address these gaps by developing CareerGuru an AI-based career pathway recommendation system tailored specifically for IT undergraduates. Using the Design Science Research (DSR) methodology, data were collected through interviews with students and career advisors to identify challenges and system requirements. The system integrates the Big Five personality model, the RIASEC career interest framework, skill assessments, and CV parsing to build comprehensive user profiles. These are analyzed using the OpenAI ChatGPT API to produce personalized, explainable career recommendations, skill-gap identification, and learning resource suggestions. CareerGuru was developed as a web-based platform using HTML, CSS, and JavaScript for the frontend, Node.js for the backend, and OpenAI's ChatGPT API for AI processing. The platform supports CV uploads in PDF/DOCX formats and generates a downloadable Career Insight Report containing recommended IT roles aligned with the Sri Lankan market. Pilot testing with IT undergraduates and expert validation by career advisors confirmed that the system delivers relevant, actionable, and locally contextualized recommendations. CareerGuru enhances early career planning, improves decision-making confidence, and bridges the gap between academic preparation and industry needs. Future enhancements include university-wide deployment, multilingual support, advanced machine learning-based predictions, and integration with online learning platforms.

Keywords: *Artificial Intelligence, Career Guidance, IT Undergraduates, Big Five Personality, Generative Artificial Intelligence, Career Recommendation System*

Enhancing Cross-Domain Sentiment Analysis via Attention-Based Feature Integration

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Abstract

This research addresses the critical need for scalable, domain-adaptable sentiment analysis by proposing a sophisticated fusion framework that integrates semantic, lexical, and syntactic features through a learnable attention mechanism. While traditional models like TF-IDF and Word2Vec often struggle with cross-domain vocabulary variations and limited semantic depth, this study leverages multiple linguistic perspectives to enhance classification accuracy. The architecture utilizes Bidirectional Encoder Representations from Transformers (BERT) for deep semantic embeddings, the Valence Aware Dictionary for Sentiment Reasoning (VADER) for lexical scoring, and Part-of-Speech (POS) tagging for syntactic structure. A key innovation of this work is the implementation of a dynamic attention layer that mathematically weights these parallel feature streams, prioritizing the most relevant linguistic cues for each specific context. Developed in Python using PyTorch and deployed via Streamlit, the model was rigorously tested on extensive datasets from Amazon, IMDb, and various online education platforms totaling 600,000 reviews. Experimental results validated through Stratified 10-Fold Cross-Validation indicate a significant performance leap, achieving testing accuracies of 91.33% for Amazon and 89.88% for Education. Notably, the fused model outperformed BERT-only baselines by up to 5% and showed remarkable robustness in cross-domain scenarios, such as transferring from Amazon to IMDb with 76% accuracy. These findings demonstrate that the strategic integration of multi-level linguistic data via attention-based fusion significantly mitigates the limitations of single-modality models, offering a more interpretable and precise solution for real-time sentiment prediction across diverse digital ecosystems.

Keywords: *Sentiment Analysis, BERT, VADER, POS Tagging, Attention Mechanism, Cross-Domain Classification*

Attention-Enhanced Support Vector Classification for Early Chronic Kidney Disease Prediction

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Abstract

Chronic Kidney Disease (CKD) is a major noncommunicable disease characterized by gradual kidney function decline and limited early-stage symptoms, making timely diagnosis challenging yet critically important. In many developing healthcare systems, delayed detection leads to increased morbidity, mortality, and significant financial burden due to expensive renal replacement therapies. Although machine learning models have shown promising performance in CKD prediction, many traditional approaches rely on static or correlation-based feature selection methods that may overlook complex interactions among clinical variables. This study proposes an Attention-Enhanced Support Vector Classification framework for early CKD prediction using longitudinal patient health data collected between 2018 and 2023, comprising 2,859 records and 87 clinical attributes. The proposed approach integrates an attention mechanism to dynamically assign importance weights to features before classification using a Support Vector Classifier (SVC), enabling adaptive learning of the most predictive clinical indicators. After data preprocessing, encoding, normalization, and model training, the baseline SVC achieved an accuracy of 95.7%. The attention-enhanced model improved performance to 98.3% accuracy, with notable gains in precision, recall, and F1-score, particularly for the minority CKD class, demonstrating improved handling of class imbalance. Additionally, the attention mechanism enhances interpretability by identifying influential features, supporting transparent and clinically meaningful decision-making. The results indicate that combining attention-based feature weighting with SVC offers a robust, accurate, and interpretable solution for early CKD detection, with strong potential for integration into clinical decision support systems in low-resource healthcare environments.

Keywords: *Chronic Kidney Disease, Support Vector Classifier, Attention Mechanism, Feature Selection, Machine Learning*

Real-Time Fall Prediction and Anomaly Detection for Elderly Care Using Computer Vision

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Abstract

Falls are the leading cause of both fatal and non-fatal injuries among the elderly population worldwide, posing significant challenges to healthcare systems and caregivers. Traditional fall monitoring systems often rely on wearable sensors, which suffer from low user compliance, or cloud-based AI, which raises significant privacy concerns. This paper presents a novel, privacy-centric computer vision system for real-time fall detection and anomaly recognition. The proposed solution introduces a Hybrid Multi-Modal Architecture, integrating deterministic physics-based analysis of body movements, including velocity and trunk angle, with a probabilistic AI model running locally on edge devices powered by Gemma 3 270M. This hybrid approach enables high-precision detection of falls, long-lie periods, and irregular gait patterns such as limping, without transmitting sensitive video data to the cloud. The system was evaluated on the UR Fall Detection Dataset and achieved a Precision of 100% and a specificity of 100%, demonstrating zero false alarms on normal activities. While Recall was identified as an area for improvement as 8.57%, the system's ability to process video streams at 30 FPS with latency under 50 milliseconds on edge hardware makes it a viable, production-ready solution for continuous, non-intrusive elderly care.

Keywords: *Computer Vision, Elderly Care, Fall Detection, Gemma 3, Edge AI, Hybrid Architect*

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