8th International Conference on Soft Computing, Control and Mathematics (SCM 2025)

December 18 ~ 19, 2025, Virtual Conference

Call for Participation

We invite you to join us in **8th International Conference on Soft Computing, Control and Mathematics (SCM 2025)** will provide an excellent international forum for sharing knowledge and results in theory, methodology and applications impacts and challenges of Soft Computing, Control and Mathematics. The conference documents practical and theoretical results which make a fundamental contribution for the development of Soft Computing, Control and Mathematics. The aim of the conference is to provide a platform to the researchers and practitioners from both academia as well as industry to meet and share cutting-edge development in the field.

Authors are solicited to contribute to the conference by submitting articles that illustrate research results, projects, surveying works and industrial experiences that describe significant advances in the following areas, but are not limited to:

Highlights of IOTSEC 2025 include:

- 2nd International Conference on Computer Science, Engineering and AI (CCSEAI 2025)
- 2nd International Conference on AI, Machine Learning and Data Science (AIMDS 2025)
- 2nd International Conference on NLP, AI, Computer Science & Engineering (NLAICSE 2025)
- 2nd International Conference on Signal Processing Trends (SPT 2025)
- 2nd International Conference on Education and Artificial Intelligence (EDUAI 2025)
- 11th International Conference on Bioscience & Engineering (BIOE 2025)
- 11th International Conference on Emerging Trends in Electrical, Electronics & Instrumentation Engineering (EEI 2025)
- 11th International Conference on Recent Trends in Electrical Engineering (RTEE 2025)
- 8th International Conference on Medical Sciences (MEDS 2025)
- 2nd International Conference on Advances in Mechanical Engineering (AME 2025)
- 11th International Conference of Advances in Materials Science and Engineering (MAT 2025)
- 2nd International Conference on IoT & Information Security (IOTSEC 2025)

Registration Participants

Non-Author / Co-Author / Simple Participants (No Paper)

100 USD (With Proceedings)

Accepted Paper

Leveraging Machine Learning in Web Analytics to Optimize E-Service Delivery

Mohammed MubarkootTechnology Management, Economics and Policy, Seoul National University, Seoul, Korea

ABSTRACT

Understanding and interpreting user behavior while interacting with e-services is fundamental to improving service design, delivery efficiency, and customer experience. Traditional web analytics systems provide descriptive insights but often fail to capture the dynamic and context-specific patterns of user interaction. This study proposes a conceptual framework that combines machine learning (ML) with web analytics to transform behavioral data into actionable intelligence for optimizing e-service delivery. The proposed model enables user clustering, anomaly detection, and adaptive content localization through continuous learning mechanisms. By leveraging ML, organizations can move beyond static dashboards toward intelligent, predictive analytics that inform content strategy, enhance personalization, and optimize computing resources. The paper contributes to both academic research and managerial practice by articulating how ML-enhanced web analytics can bridge the gap between data abundance and strategic action in digital ecosystems.

KEYWORDS

Web Analytics, Machine Learning, E-Service Delivery, User Behavior Analysis, Intelligent Content, Service Optimization

AIRBORNE ACOUSTIC COMMUNICATION USING INAUDIBLE FREQUENCIES SUPPORTED BY SMART DEVICES

Shiquan Piao,

Division of AI, Big data and Block chain, Daegu Gyeongbuk Institute of Science and Technology, Daegu, Korea

ABSTRACT

Aerial acoustic communication is a low-rate data exchange technology that transmits and receives information using audible or inaudible acoustic waves. Although Near Field Communication (NFC) has received considerable attention in recent years, its actual adoption among mobile users remains relatively low due to hardware availability and platform restrictions. In contrast, aerial acoustic communication can operate on virtually all smart devices, allowing phones to exchange information through acoustic waves without relying on specialized short-range communication hardware. This makes it an attractive complementary technology to existing wireless communication methods. A major advantage of this approach is that it requires no modification to existing hardware, since standard microphones and speakers can be used for both transmission and reception. However, conventional devices primarily support the audible frequency range, and most of this range overlaps with human speech and ambient sounds, which can cause interference. As a result, only a narrow frequency band can be reliably used for communication. To overcome this limitation, the proposed method employs a frequency band that is supported by common smart devices yet lies in a region minimally affected by human speech and everyday acoustic environments, thereby improving communication stability. To further enhance robustness and frequency resolution in this constrained spectrum, this paper introduces a narrow-band aerial acoustic communication technique based on Zoom FFT. By leveraging its high- resolution spectral analysis capabilities, the system can accurately extract communication signals even in noisy indoor environments, making it suitable for practical short-range data exchange applications.

KEYWORDS

Acoustic Communication, FFT, Zoom FFT, NFC

ENHANCING THE ACADEMIC RATING INDEX (ARI) THROUGH CROSS-PLATFORM DATA INTEGRATION: AGGREGATING SUPERVISORS' RESEARCH OUTPUT, SUPERVISION RECORDS, AND EXPERTISE INTO A CENTRALISED ACADEMIC SEARCH AND RANKING ENGINE

Thapelo Mokole1, Marcia Mkansi 2

1Department of Computer Science, University of South Africa, Pretoria, South Africa

2Department of Operations Management, University of South Africa, Pretoria, South Africa

ABSTRACT

This article looks at how the Academic Rating Index (ARI) can be integrated with a variety of academic platforms to improve data collection and increase access to supervisors' academic records and competency. The ARI aims to address challenges faced by postgraduate students in South Africa, such as an increasing student-to-supervisor ratio, insufficient assessment of supervisor effectiveness, and limited digital forums for student participation. The ARI uses

cross-platform data collection and powerful search functions to help students locate and interact with distinguished supervisors who share their research interests. Supervisors can assert and amend their profiles using the site, ensuring that the information is accurate and up to date. This study builds on previous research and emphasizes the importance of a central directory for academic supervisory expertise.

KEYWORDS

Search engine, Postgraduate supervision, Student & Supervisor relationship

Multimedia-Supported Confidence Development: A Mobile-Video–Based Pedagogical Framework for Youth Performance Learning

Peiwen Su

California Youth Music Competition (CYMC), Los Angeles, USA

ABSTRACT

This study examines how mobile-video–based learning can enhance confidence and emotional resilience in youth performance education. Drawing on over one hundred student recordings from the California Youth Music Competition (CYMC), the study proposes a multimedia-supported framework integrating mobile video, cloud archiving, and reflective viewing. Three developmental trajectories were identified: Avoidance to Appearance, Compliance to Expression, and Expression to Agency. Mobile video served as a psychological mirror, enabling students to revisit their performances, recognize recovery behaviors, and reinterpret mistakes with greater emotional tolerance. Cloud-based curation further strengthened motivation. In the CYMC 2024 cycle, winning performances were compiled into a Digital Winners' Portfolio and submitted to international competitions, prompting notable increases in confidence and artistic investment. Findings suggest that accessible multimedia tools, when paired with meaningful external opportunities, create a scalable model that supports self-efficacy, reflective growth, and early artistic identity formation in young performers.

KEYWORDS

Mobile-video learning; Multimedia-supported pedagogy; Performance-based education; Confidence development; Reflective learning; Youth music performance

INTELLIGENT SPECTROSCOPY: MERGING RAMAN, AI, AND ELECTRONICS FOR ADVANCED MEDICAL DIAGNOSIS AND TREATMENT

Nadir Omar MassoudDriza1,RafaaMrajaYousef Said1, AkramMousay Akhneefar1, Asma R.S. Elgade1, Hanan Mohammed Abdulsalam Ali1

1Departmentof Physics,faculty of Arts and Sciences Elmarj, Universtiy of Benghazi

ABSTRACT

Intelligent Spectroscopy represents a paradigm shift in medical diagnostics, moving beyond traditional subjective and time-consuming methods. This approach integrates Raman Spectroscopy (RS) for non-destructive molecular fingerprinting, Artificial Intelligence (AI) for automated high-accuracy data analysis, and advanced Electronics/Photonics for system miniaturization and signal enhancement. This synergy aims to overcome the inherent limitations of weak Raman signals and complex biological data, enabling real-time, label-free, and objective molecular diagnosis at the point of care or during surgical procedures. Early applications show exceptional promise in areas like cancer detection (colorectal, breast), surgical margin assessment, and infectious disease identification, paving the way for truly personalized and precision medicine.

KEYWORDS: