Book of Abstracts
DIGIAI 2026

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PLENARY SPEAKER

Id-134

When AI Thinks for Us: Finding the Right Balance Between Assistance and Learning

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Abstract: Generative Artificial Intelligence (GenAI) is rapidly transforming education in ways that surpass previous technological disruptions. Its influence now extends across every aspect of the educational ecosystem—from teaching and learning to assessment and academic integrity—challenging long-held assumptions about how students learn, acquire knowledge and demonstrate understanding.

Although GenAI offers new opportunities for personalized learning, creativity, and productivity, it raises fundamental questions about cognitive offloading, critical thinking, and deep learning. The educational community remains divided; some studies suggest it can increase student learning, while others suggest that AI undermines learning, critical thinking, and intellectual development. The current evidence suggests that the impacts of GenAI depend on how, when, and why it is used in teaching and learning. What is clear is that GenAI is not a passing trend but a transformative technology that must be thoughtfully integrated into the education landscape. Moreover, traditional content-based assessments are no longer adequate as measures of student learning.

In this presentation, we will examine the role of GenAI in education and the question: When AI begins to think for us, what happens to human learning? Is GenAI a powerful educational tool, an agent for academic misconduct, or both? We will examine how educators can leverage AI to enhance students' thinking, creativity, communication, and problem-solving abilities. Attendees will leave with a better understanding of the opportunities and risks of GenAI, along with learning activities that harness its power.

Keywords: Generative Artificial Intelligence (GenAI), Higher Education, Critical Thinking, AI-Assisted Learning.

PLENARY SPEAKER

Id-136

What Variables Affect Genai Assessment of Academic Writing?

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Abstract: At its best, use of generative artificial intelligence (genAI) can meet calls in writing assessment scholarship [1], [2], [3], [4] for more socially just and equitable assessment. Research has shown that genAI has the potential to support disabled [5], [6] and multilingual [7], [8], [9] writers. However, little is known about what factors influence the writing feedback that genAI provides. This presentation will report what variables affected genAI platform outputs' alignment with the VALUE Rubric for Writing, a widely accepted rubric developed by the American Association of Colleges and Universities used to evaluate written texts, when genAI platforms were prompted to assess academic writing. It will share analysis of the outputs (N = 96) of the free, premium, and preview (if available) versions of Anthropic's Claude, Google's Gemini, Microsoft's Copilot, and OpenAI's ChatGPT to two student and two professional academic writing samples. Results show differences in output alignment with the VALUE Rubric for Writing were most pronounced with choice of genAI platform. Differences in assessment role (coach, grader, and peer reviewer), AI access (free vs. premium), and rubric presence (with the VALUE Rubric for Writing uploaded vs. not) were also statistically significant. Author experience (novice vs. professional) and stage of draft (early draft vs. final draft) were not. Understanding the variables that affect genAI performance for writing assessment is crucial for practical and conceptual reasons. Practially, such knowledge can allow for prompt engineering that increases the likelihood of receiving beneficial and desired writing feedback that meets teachers' and students' needs. Conceptually, genAI use can shape how teachers approach assigning and grading writing and how students approach writing, revising, and editing their texts. Researching what feedback genAI provides is necessary in order to showcase the potentials and limits of genAI as a writing assessment tool and the value of humans as assessors of writing.

Keywords: Generative Artificial İntelligence, Writing Assessment, Writing Feedback, VALUE Rubric for Writing, Academic Writing.

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PLENARY SPEAKER

Id-161

Digital Youth Championing African Indigenous Foodways for Sustainable Ecosystems

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Abstract: Rapid climate change, environmental degradation, and rising public health crises demand a return to sustainable, localized nutrition systems across Africa. This paper explores how tech-empowered African youth are revitalizing the ancestral philosophy of "food as medicine" to foster ecological resilience and advance a One Health agenda. By leveraging digital storytelling, social platforms, and mobile-enabled agritech, young innovators are de-stigmatizing indigenous crops, preserving bio-cultural heritage, and bridging generational knowledge divides. Comparing cross-regional cultural paradigms and varied biomes—from the arid Sahel to the tropical Congo Basin—this study illustrates how traditional food systems enhance biodiversity, enrich soil health, and combat malnutrition. Ultimately, digital youth serve as essential intermediaries between ancient ecological wisdom and modern policy frameworks. Championing African indigenous foodways not only restores vulnerable ecosystems and strengthens planetary health, but also drives an inclusive, self-reliant, and climate-resilient future for the African continent.

Keywords: Indigenous Food Systems, One Health, Climate Resilience, Digital Youth Empowerment.

INVITED SPEAKER

Id-129

Innovation, Stakeholder Orientation, And Lifestyle: A New Conceptual Model of Consumer Willingness to Pay Premium Prices for Sustainable Products

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Abstract. This study aims to propose an integrated conceptual framework that clarifies the psychological mechanisms linking consumer perceptions to purchase intentions for premium sustainable products. A conceptual model is developed, outlining the hypothesized relationships between consumer perceptions of a firm's innovation, competitive advantage, sustainable practices, and stakeholder orientation. The model positions stakeholder orientation as a mediator of these perceptions on consumers' willingness to pay a premium for sustainable products, while lifestyle is proposed as a moderating factor. The framework advances theoretical understanding through eight testable propositions. he proposed framework captures indirect, mediated, and moderated relationships that previous research has not fully addressed. It suggests that perceptions of a firm's innovation, the competitive advantage derived from sustainable practices, and stakeholder orientation influence purchase willingness indirectly via stakeholder orientation as a mediator. Lifestyle is expected to moderate these pathways. This conceptual model provides insights into how firms can shape consumer perceptions to enhance their stakeholder image and support for premium sustainable products. The theoretically grounded lens and propositions offer strategic guidance for overcoming pricing challenges associated with sustainable products by tapping into the psychological drivers of value-based decision-making. Empirical testing is recommended to validate the proposed relationships in the model.

Keywords: Premium products, Sustainable products, Values-driven consumption, Sustainable behavior, Willingness to pay.

INVITED SPEAKER

Id-139

The UPD Model: Three Search Directions for Identifying AI Potentials in Companies

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Abstract: Many companies recognize the strategic relevance of artificial intelligence (AI) but struggle to determine where a viable first project should originate. Existing AI-readiness and implementation frameworks often assume that a goal, use case, or potential field has already been defined. This paper introduces the UPD model, a practical innovation logic for the preceding orientation stage. It distinguishes three search directions: use-case-driven, problem-driven, and data-driven. In the use-case-driven path, organizations start from known AI applications, screen their underlying logic, and assess transferability. The problem-driven path begins with a concrete operational pain point, analyzes causes and process conditions, and applies an AI-suitability check before deriving a use case. The data-driven path starts from a structured data inventory and exploratory analysis to identify patterns and opportunities that can be translated into learning objectives and relevant features. The model was applied in two small and medium-sized enterprises: a metalworking company and an industrial electronics company. The applications show that each path provides a viable entry point but requires specific facilitation. Use-case-driven work benefits from active moderation to overcome silo thinking and promote cross-functional transfer. Data-driven work must be bounded to prevent the search from becoming a broad data governance exercise. Problem-driven work can reveal a well-founded AI solution direction, but its assessment logic should be simplified and supported by a worked example. In the second case, the use-case-driven and problem-driven paths independently converged on a copilot approach, indicating that different starting points can lead to the same viable solution. The UPD model therefore helps companies structure the earliest stage of AI adoption, reduce premature solution fixation, and translate initially vague expectations into assessable pilot ideas. Further validation across industries, company sizes, and functions is required, as well as integration with AIreadiness, canvas, and piloting frameworks

Keywords: Artificial İntelligence; AI Opportunity İdentification; Small and Medium-Sized Enterprises; Innovation Management; AI Readiness.

INVITED SPEAKER

Id-140

Tensor-based Similarity Networks for Colorectal Cancer Spatial Patterns

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Abstract: Objective: Spatial transcriptomics enables gene expression profiling within the native spatial context of tissue architecture, offering new opportunities to characterise tumour heterogeneity. This study aims to develop a tensorderived similarity network framework for quantitatively analysing spatial organisation in colorectal cancer (CRC), integrating tensor decomposition of spatial-molecular data with network-based measures of connectivity and heterogeneity, and to statistically test whether the resulting network structure reflects genuine spatial organisation rather than random variation. Methods: Visium spatial transcriptomics data from four human primary CRC tissue sections were normalised, reduced via PCA, and organised into third-order spatial tensors. Low-rank canonical polyadic decomposition extracted latent spatial-molecular embeddings, which were used to construct k-nearest-neighbour similarity networks. An embedding-permutation framework generated randomised spatial configurations while preserving feature distributions, enabling empirical permutation testing of global similarity, network density, and spatial heterogeneity. Results: Across all four patients, tensor-derived networks showed low global similarity and density, indicating sparse but structured connectivity, while the largest connected component retained the majority of nodes. Randomised (permuted) networks consistently exhibited significantly higher similarity, density, and heterogeneity than the real spatial configurations (two-sided permutation $p=0.001998$ for all measures across 1000 permutations), demonstrating that observed spatial organisation constrains network structure beyond what is expected under random embedding arrangement. Sensitivity analyses confirmed that these findings were robust to variation in the principal component count, tensor rank, neighbourhood size, and similarity threshold. Examination of dominant tensor components further revealed coordinated spatial-molecular programmes linked to extracellular-matrix and stromal remodelling and intestinal epithelial differentiation and organisation, consistent with known CRC biology. Significance: This work demonstrates that combining tensor decomposition with similarity-network analysis yields a statistically grounded, interpretable framework for quantifying spatial heterogeneity in tumour tissue. The approach distinguishes biologically structured spatial organisation from random variation and captures spatialmolecular signatures consistent with established tumour biology, without relying on predefined biological annotations. It offers a general, reproducible methodology applicable to spatial transcriptomics data beyond CRC, with potential applications in spatial biomarker discovery, tumour microenvironment characterisation, and future integration with histopathological and clinical outcome data for precision oncology.

Keywords: Spatial Transcriptomics, Colorectal Cancer, Tensor Decomposition, Similarity Networks.

INVITED SPEAKER

Id-141

Metaphorics of Opacity and Error in Artıfıcıal Intelligence Discourse

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Abstract: Language does not merely describe artificial intelligence (AI); it actively constructs how AI systems, their capabilities, limitations, and risks are understood. This study examines three metaphorically motivated terms, black box, hallucination, and bias, as instruments for conceptualising opacity, error, and distortion in contemporary AI discourse. The objective is to identify how these terms structure the interpretation of problematic aspects of AI and how their meanings extend from technical description to broader epistemic, ethical, and social evaluation. The study adopts a cognitive-discursive approach to metaphorical terminology and analyses the use of the selected terms across scientific and media discourse. A metaphorical term is understood as a unit that both names a phenomenon and evokes a familiar image that shapes our understanding of it. This perspective makes it possible to examine not only the semantic content of individual terms but also the conceptual models they activate and the discursive functions they perform. The analysis focuses on the source domains underlying the three terms and on the ways in which their meanings develop across technical and socially oriented contexts. The findings reveal a coherent progression from epistemic opacity to behavioural error and, finally, to social evaluation. Black box defines AI as a closed mechanism whose internal operations are inaccessible or difficult to explain. It therefore foregrounds opacity, limited interpretability, and the problem of control. Hallucination shifts the focus from what cannot be known about a system to what the system produces incorrectly. The metaphor of distorted perception frames generative error as the production of plausible but factually unsupported content. This term also introduces a pronounced anthropomorphic dimension into the representation of generative models. Bias extends the problem into the social and ethical domain. Its semantic ambiguity is particularly significant. In technical and statistical contexts, bias denotes systematic deviation or estimation error, whereas in socio-ethical discourse it evokes prejudice and unfairness. The term therefore brings conflicting technical and socio-ethical interpretations of deviation into a single conceptual frame. Taken together, black box, hallucination, and bias construct a continuum from opacity to error and then to social consequence, linking explainability, reliability, and fairness. Their significance therefore extends beyond terminological convenience. These metaphors function as instruments of socio-political framing. They influence how responsibility for AI failures is attributed, whether systems are perceived as trustworthy and controllable, and which actors are expected to explain, correct, or govern their consequences. Metaphorical terminology thus participates in defining the boundaries of acceptable AI use and in negotiating responsibility for increasingly automated decision-making. Explainability, reliability, and fairness must consequently be managed in tandem to achieve socially sustainable AI.

Keywords: Artificial İntelligence; AI Discourse; Conceptual Frame, Metaphorical Terminology, Hallucination.

INVITED SPEAKER

Id-142

INTELLIGENT ROBOTIC SYSTEM FOR MICROPLASMA SPRAYING OF FUNCTIONAL COATING

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Abstract. Despite substantial progress in industrial robotics, the application of robotic manufacturing systems remains largely confined to large-scale production, as adapting a robotic system to a new product type typically requires complex calibration procedures to ensure conformity with the predefined model incorporated into the robot [1]. While effective for mass production, this paradigm significantly limits the flexibility required for customized manufacturing, complex free-form geometries, and patient-specific biomedical devices. Therefore, the practical implementation of the task of automatically generating a program code for a robot- manipulator from a computer-aided design (CAD) model could make it possible to efficiently process the surfaces of small-scale and piece products of complex shapes using a robotic arm. The objective of this study is to develop an intelligent robotic system for plasma machining of industrial components, including 3D-printed medical implants, enabling automated robotic arm path planning. A distinctive characteristic of the intelligent robotic system is the preliminary 3D scanning of the workpiece surface, followed by the automatic generation of the robot-manipulator program code based on the acquired 3D scanning data. The preliminary scanning is performed using distance sensors installed on the same robotic arm that subsequently performs plasma spraying of the object. Therefore, the trajectory for the thermal spraying process is generated without any prior information about the shape or spatial orientation of the product. In this approach, the trajectory is generated by the robot control system using information about the current external environment, namely, a 3D model of the processed surface reconstructed by the robot in the form of a point cloud representing the coordinates of the object surface. The implementation of such an intelligent robotic system enables the processing of individual and large-sized products whose geometric parameters are known with limited accuracy, as well as products exhibiting deviations from their specified shape. At the same time, robotic 3D scanning and subsequent processing of the acquired data provide a relatively inexpensive alternative to machine vision approaches because they rely on low-cost distance sensors. Nevertheless, high accuracy can be achieved through the use of an industrial robot providing precise positioning of the end effector. Previously, the authors developed a new method for manipulator trajectory planning to improve the quality and efficiency of microplasma spraying (MPS) of protective coatings [2]. The developed trajectory-planning algorithms were first practically implemented using an intelligent system

based on a Kawasaki industrial robot. Simultaneously, research was conducted on robotic MPS of biocompatible coatings on medical orthopedic implants [3, 4]. The results demonstrated the potential of combining two advanced technologies—selective laser melting for the implant additive manufacturing and robotic MPS—to improve process precision and efficiency. Thus, the use of an intelligent robotic system for MPS of functional coatings significantly contributes to the development of digital manufacturing. The transition toward Industry 5.0, therefore, requires robotic systems capable of perceiving, interpreting, and autonomously responding to real-world environments rather than executing pre-programmed instructions.

Keywords: Industrial Robot-Manipulator, 3D Scanning, Automatic Path Planning, Selective Laser Melting, Medical Implants.

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INVITED SPEAKER

Id-146

Gendered Zootopia on Instagram: Curation of Pet Accounts, Identity Representation, and AI Tools

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Abstract. Social media platforms are populated by pet accounts run by human curators on behalf of animals. Because Instagram's gender-related policies don't regulate images of animals, such accounts have been theorized as a potential Zootopia (Vereshchagina & Dushakova), a space free from the platform's usual gendered constraints. Drawing on human-animal relations theory (Lupton; Maddox), concept of gender performativity (Butler), and framework of platform affordances (Gaver), this talk examines how gender is (or isn't) performed across account architecture (headers, pinned stories, networking) and content (visual styling, character-building). Based on an analysis of popular accounts, I'll show that headers and pinned content are overwhelmingly repurposed for promotion and monetization rather than gender expression; where gender does appear, it relies on conventional markers (e.g., color coding, accessories, poses) mediated by the pet's degree of anthropomorphism. Rather than enabling creative or gender-nonconforming representation, pet accounts largely reproduce familiar, commercially legible stereotypes. The talk closes with an open question: how might AI-assisted content tools reshape this landscape?

Keywords: Instagram, Pet Accounts, Human-Animal Relationships, Identity, Animal-Human-Digital Assemblages, Platform Affordances, Gender, AI.

INVITED SPEAKER

Id-151

From Generation to Evaluation and Transformation: Building AI Literacy in Pre-Service Foreign Language Teachers Through Checklist-Based Assessment of AI-Generated Lesson Plans

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Abstract: The rapid integration of generative artificial intelligence (GenAI) into educational contexts has fundamentally altered the landscape of foreign language teaching and teacher preparation. While numerous studies confirm that teachers increasingly rely on AI tools for lesson planning (43%), material development (57%), and assessment design, critical concerns persist regarding the methodological adequacy of AI-generated products. This presentation addresses a pressing gap in the field: the absence of a systematic framework for developing what we term AI Pedagogical Literacy (AIPL) in pre-service foreign language teachers—a composite competence encompassing critical evaluation, methodological correction, and strategic co-creation with AI systems. Drawing on three interconnected empirical studies conducted at Petrozavodsk State University (2025–2026), the presentation synthesises findings from: (1) a comparative assessment of AI-generated lesson plans for grammar skills enhancement across five platforms (DeepSeek, Perplexity, Gigachat, ChatGPT, Qwen) using a 14-criterion checklist; (2) a comparative analysis of lesson fragments designed by 43 fourth-year students and four AI systems for grammar and speaking skills development; and (3) a longitudinal study of digital competency development among 68 pre-service teachers using the DigCompEdu framework. Key findings reveal that all AI platforms produce lesson plans requiring methodological correction, with particular deficiencies in sequencing activities from simple to complex, ensuring error-free practice, and activating self-monitoring mechanisms. The Qwen platform demonstrated the highest adequacy scores, yet even its outputs necessitated refinement. Notably, pre-service students outperformed most AI systems in Task 2 (speaking skills), scoring 96 points compared to AI scores ranging from 82 to 92. However, both students and AI struggled with complex methodological requirements, suggesting that neither can replace the other. The digital competency study showed a 23.9% improvement (d = 2.77) following a practice-oriented course, confirming the effectiveness of project-based AI integration in teacher training. Building on these converging findings, the paper proposes a five-phase pedagogical model — Generate, Analyze, Evaluate, Reflect and Transform — for integrating AI literacy development into pre-service foreign language teacher education. The model positions checklist-based evaluation of AI-generated lesson plans as a core methodological activity that simultaneously develops teachers' critical thinking, deepens their understanding of language acquisition theory, and builds competence in

purposeful AI use. Practical recommendations are offered for curriculum designers, teacher educators, and AI platform developers.

Keywords: AI-Generated Lesson Plans; Pre-Service Teacher Education; Checklist-Based Evaluation; Foreign Language Methodology; Digcompedu, Ai Pedagogical Literacy.

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INVITED SPEAKER

Id-152

Integrated Multi-Model AI Architecture for Battery Health Monitoring and Maintenance of Electric Vehicle Based on Federated Learning

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Abstract. Electric vehicle (EV) adoption faces significant barriers due to limited monitoring capabilities and user concerns about battery life, charging efficiency, and maintenance timing. Current EV monitoring systems provide basic data without predictive insights or integrated analysis. This paper introduces a combined AI system that uses Long Short-Term Memory (LSTM) networks to predict battery health, Convolutional Neural Networks (CNN) to analyse driving habits, and Random Forest algorithms for maintenance predictions, all while keeping user privacy safe through federated learning. The system was validated through comprehensive field testing with 50 EV owners across four geographic regions over six months, covering eight different EV models. Our approach achieved substantial improvements over existing methods: battery life prediction accuracy improved by 85% (mean absolute error of 2.4% vs. manufacturer estimate of 5.7%), charging optimisation reduced charging time by 23.2% while decreasing battery stress by 30.7%, and predictive maintenance achieved 92% accuracy with a 31-day advance warning compared to 8 days for traditional methods. The federated learning implementation achieved 94.2% of centralised model performance while preserving user privacy and reducing data transmission by 98.7%. Economic impact analysis demonstrated annual savings of $990.85 per vehicle, representing an 11.1× return on investment. These results address key EV adoption barriers while providing a scalable, privacy-preserving solution for intelligent vehicle monitoring.

Keywords: Electric Vehicles, Artificial Intelligence, Federated Learning, Predictive Maintenance, Battery Health Monitoring, Multi-Model Integration.

INVITED SPEAKER

Id-153

Discourses of Tech Companies on Self-Regulation of AI: Cases of leading Russian AI Developers

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Abstract. In the presentation I will show how leading companies developing AI in Russia are talking about the importance of self-regulation in the context of risks connected to AI growth. Both companies are involved in a set of initiatives that will be analyzed. First, both companies are involved in the experimental regulatory regime that is based on business propositions on how to regulate AI technologies, which is stricter than the one proposed by the Government. This is interesting in comparison with global experience where big business companies are complaining about some forms of regulation as too strict. Second, these two companies are actively playing in the field of higher education and propose special programs for students. This is interesting in the context of strategies of preparing specialists not from the position of Universities but as a request of business actors. Third, these companies are replacing Universities to some extent being active in publishing research articles and organizing research conferences. This is important in the context of redistribution of knowledge production as such companies have access to internal data to analyze processes that surround the development and the usage of new technologies.

The analysis of these two cases allows us to reflect on social construction of technology as the first step of this process is based on trying to get closure in the meaning of new artifacts through discourses. At the same time, it is tightly connected to socio-technical imaginaries as these companies usually refer to the future that we all are going to have with AI.

Keywords: Artificial Intelligence Governance, Corporate Self-Regulation, Socio-Technical Imaginaries, Knowledge Production.

INVITED SPEAKER

Id-156

From Property to Digital Legacy: Assessing Digital Assets In Inheritance Law

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Abstract: The ongoing digital transformation of society has had a considerable impact on the composition of personal wealth, thereby giving rise to novel legal questions concerning the transmission of assets upon death. In addition to conventional forms of property, individuals now accumulate a wide variety of digital assets throughout their lifetimes. These include cryptocurrencies, digital wallets, social media accounts, cloud-based data, online gaming assets, domain names, digital intellectual property and content created or stored on digital platforms. These assets may possess substantial economic, personal, cultural, and sentimental value, yet their legal status and succession remain uncertain in many legal systems. Consequently, the field of inheritance law is under mounting pressure to adapt to forms of property that frequently exceed territorial boundaries and conventional ownership concepts.

The presentation examines the emergence of digital legacy as a distinct legal phenomenon and analyses the challenges digital assets create within the framework of inheritance law. The focus of this study is the legal classification of digital assets, with particular attention being devoted to the question of whether they should be regarded as property rights, contractual claims, intellectual property interests, or sui generis legal objects. The presentation also explores the difficulties associated with identifying, accessing, valuing, and transferring digital assets after death. These challenges are frequently exacerbated by encrypted technologies, the anonymity of blockchain-based assets, platform-specific terms of service, and the absence of clear testamentary instructions.

The presentation also examines the interaction between inheritance law and other regulatory fields, including data protection, privacy rights, consumer law, and digital platform governance. A fundamental concern pertains to the equilibrium between the deceased individual's right to privacy, the interests of their heirs, and the obligations of service providers who govern access to digital content and accounts. Recent judicial decisions and legislative initiatives demonstrate that traditional succession rules often prove inadequate when applied to the digital environment, particularly where access rights and ownership rights do not coincide.

Drawing on the principles of comparative legal analysis and contemporary scholarly debates, the presentation evaluates emerging regulatory models and identifies best practices for the treatment of digital assets in inheritance proceedings. The argument is made that the increasing importance of digital wealth necessitates a reconceptualisation of traditional property and succession law doctrines. The establishment of clear and harmonised legal rules governing the identification, administration, valuation, and transfer of digital assets is imperative to ensure legal certainty, to protect the legitimate interests of heirs, and to preserve an individual's digital legacy across generations. The presentation under

discussion highlights the necessity for a contemporary framework for inheritance law that is capable of responding effectively to the realities of the digital age.

Keywords: Digital Asset, Cryptoasset, Digital Inheritance, Digital Legacy, Post Mortem Privacy.

Acknowledgment: The scientific presentation and the abstract was supported by the János Bolyai Research Fellowship of the Hungarian Academy of Sciences.

INVITED SPEAKER

Id-165

The Era Of Digitalization: Overcoming Uncertainty In The Higher Education System

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Abstract. The processes of digitalization in education are associated not only with providing the educational process with the achievements of high technologies, but also with internal changes taking place in society and in the higher education system itself. If at the initial stage, starting in the 1990s, the focus was on creating and filling the technological base of educational institutions (the emergence of computers, the internet, and the first digital tools), then in the 2000s, the process of using new technologies in the management system of educational institutions and in the pedagogical process began. Currently, digital solutions go beyond narrow tasks and are integrated into the main educational processes. Even now, these large-scale integration processes foreshadow a profound transformation of the higher education system, changing social practices.

Changes in social practices determine the growth of uncertainty and non-linearity in the formation of social relations, blurring the established classical boundaries of the educational process, pedagogical practices, and the professional goals of higher education. It is impossible to eliminate this uncertainty — it becomes part of the new reality. It is extremely difficult to ensure guarantees of stability under such conditions. However, understanding the principles of forming new educational practices and ways to solve emerging problems using artificial intelligence helps to minimize subjective uncertainty and anxiety and to build promising educational strategies.

Keywords: Digitalization, High Education System, Artificial Intelligence, Smart Pedagogy, A New Educational Landscape, The Nonlinear Principle of Structuring the Educational Process.

Acknowledgment: The research is funded by the RUDN UNIVERSITY (Research Institute: No. 203179-0-000. "Actual aspects of university promotion in the context of educational environment transformation")

INVITED SPEAKER

Id-168

The Last Human Skill? Rethinking Digital Skills, AI and the Future of SMEs

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Abstract: As artificial intelligence (AI), automation, and intelligent machines rapidly reconfigure business ecosystems, conventional assumptions regarding digital competencies and organizational performance face unprecedented disruption. As technology acquires the capacity to analyze data, generate content, and solve complex operational problems, a fundamental strategic question emerges: which human capabilities remain truly indispensable? Grounded in the Resource-Based View (RBV) and the Dynamic Capabilities View (DCV), this presentation builds on empirical findings from 227 small and medium-sized enterprises (SMEs) evaluated via structural equation modeling (SEM).

The underlying study demonstrates that while digital skills and IT capabilities exert significant direct effects on firm performance, entrepreneurial resilience serves as a vital proactive mediating mechanism, transforming digital investments into tangible financial, market, and digital outcomes. Extending these empirical insights to the frontier of Generative AI, this presentation advances a forward-looking paradigm shift from digital operation to human–AI collaboration. The emergence of autonomous AI models challenges the traditional view that digital skills primarily serve to operate technical tools.

Instead, the strategic priority shifts to determining which tasks should be delegated to machines and which core capabilities must be retained by human actors. Critical thinking, contextual judgment, ethical reasoning, emotional intelligence, and adaptive learning emerge not merely as soft skills, but as the core micro-foundations of entrepreneurial resilience and competitive advantage. Ultimately, this presentation proposes a transition from a "human versus machine" binary toward a synergistic "human + AI" paradigm.

For SMEs navigating volatile markets, future competitiveness will depend less on simply adopting advanced technologies and more on cultivating the human resilience required to strategically govern advancements. The central proposition of this presentation is that the ultimate competitive advantage– the "last human skill" of the future– may not be another digital skill, but the strategic wisdom to determine what must remain distinctly human in an automated world.

Keywords: Artificial intelligence; Digital Skills; Entrepreneurial Resilience; SMEs; Human–AI Collaboration.

ORAL PRESENTATION

Id-129

Innovation, Stakeholder Orientation, and Lifestyle: A New Conceptual Model of Consumer Willingness to Pay Premium Prices for Sustainable Products

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Abstract: This study aims to propose an integrated conceptual framework that clarifies the psychological mechanisms linking consumer perceptions to purchase intentions for premium sustainable products. A conceptual model is developed, outlining the hypothesized relationships between consumer perceptions of a firm's innovation, competitive advantage, sustainable practices, and stakeholder orientation. The model positions stakeholder orientation as a mediator of these perceptions on consumers' willingness to pay a premium for sustainable products, while lifestyle is proposed as a moderating factor. The framework advances theoretical understanding through eight testable propositions. he proposed framework captures indirect, mediated, and moderated relationships that previous research has not fully addressed. It suggests that perceptions of a firm's innovation, the competitive advantage derived from sustainable practices, and stakeholder orientation influence purchase willingness indirectly via stakeholder orientation as a mediator. Lifestyle is expected to moderate these pathways. This conceptual model provides insights into how firms can shape consumer perceptions to enhance their stakeholder image and support for premium sustainable products. The theoretically grounded lens and propositions offer strategic guidance for overcoming pricing challenges associated with sustainable products by tapping into the psychological drivers of value-based decision-making. Empirical testing is recommended to validate the proposed relationships in the model.

Keywords: Premium Products, Sustainable Products, Values-Driven Consumption, Sustainable Behavior, Willingness to Pay.

POSTER PRESENTATION

Id-162

Digital Design of Ti-6al-4v Alloy Lattices with Controlled Kurtosis for Orthopedic Implants

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Abstract: Porous Ti-6Al-4V lattice implants offer high specific strength, bio-compatible porosity, and additive manufacturability. However, conventional stiffness reduction via porosity, pore size, or cell topology often compromises biological performance. This study presents a computational model where elastic behavior is governed by structural kurtosis — the normalized interlayer shift between adjacent layers of a periodic cubic lattice — while overall porosity remains fixed. Patient-specific orthopedic implants must balance biological integration with mechanical compatibility in local bone environments. Metallic lattices transform dense alloys into low-stiffness systems with interconnected porosity and controllable transport pathways. Ti-6Al-4V remains the dominant alloy for orthopedics and spine surgery due to its strength-to-weight ratio, corrosion resistance, fatigue strength, and compatibility with laser powder bed fusion. Additive manufacturing has expanded design options from porous coatings to fully 3D architectures with programmable porosity, pore size, and graded properties. Yet the core challenge endures: meeting biological and mechanical demands simultaneously. Current mechanical tuning strategies follow three paths: varying porosity, changing cell topology, or introducing compliant elements. Porosity adjustment is straightforward but links stiffness reduction to changes in pore volume, strut thickness, and load-bearing area. Recent studies have characterized compression, tension, and fatigue in Ti-6Al-4V lattices, assessed build orientation and defect effects, and correlated pore size with osteointegration. Comparative architecture analyses have broadened the achievable modulus range, but stiffness remains tied to relative density in all cases. Post-processing like electropolishing alters effective strut sections, and machine learning, including GANs, is emerging for inverse design. Nevertheless, a gap persists between idealized models and actual mechanical behavior, motivating our computational approach. Our approachintroduces structural kurtosis as a lattice-level design parameter — used geometrically, not statistically. Kurtosis is defined as K=Δ/a, where (Δ) is the relative interlayer shift and (a) is the unit cell size. While preserving pore volume, shifting adjacent layers changes the load path from predominantly axial tension to a combined axial-bending mode. This enables lower effective modulus and greater elastic deformability without altering topology or compromising tissue ingrowth pore space. This concept is especially relevant for patient-specific implants, where bone quality varies with anatomy, age, pathology, and loading. A single implant may contact both cortical and trabecular bone, requiring zone-specific stiffness. Structural kurtosis allows local mechanical programming within one lattice family, avoiding topology switching or unfavorable porosity changes. Beyond the analytical model, kurtosis is embedded in a digital workflow combining conditional GANs, CAD reconstruction, and

FEA. The GAN generates lattices for target porosity and stiffness, CAD converts voxel data into manufacturable models, and FEA verifies elastic response. This GAN-CAD-FEA pipeline links design rules with virtual testing, enabling rapid patient-specific implant creation and evaluation. Validation showed prediction errors below 5% in five of six cases and 6.5% in the sixth. Since the generator was trained on synthetic analytical data, this agreement validates the geometric algorithm, not the mechanical properties themselves.

Keywords: Ti-6Al-4V; Porous Lattice; Structural Kurtosis; Orthopedic Implants; GAN-CAD-FEA

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WORKSHOP: AFRICAN DIGITAL YOUTH AND REGENERATIVE TOURISM: BRIDGING CLIMATE RESILIENCE AND GLOBAL EPISTEMIC JUSTICE

Chairperson: Hassan O. Kaya

Mayashree Chinsamy

Sisanda Gqoboka

Karunay Moodley

University of KwaZulu-Natal, South Africa

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6 - Smart Cities, Sustainability and the Green Digital Shift	129 - Innovation, Stakeholder Orientation, and Lifestyle: A New Conceptual Model of Consumer Willingness to Pay Premium Prices for Sustainable Products	
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13 - AI and Healthcare Innovation	140 - Tensor-based Similarity Networks for Colorectal Cancer Spatial Patterns	
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