

Edited by
Vladan Pantović
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INFOTECH

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XLI International Conference
Infotech 2026
Book of Abstracts

Arandelovac, June 3-4, 2026

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INFOTECH 2026

Arandjelovac, 3 – 4, June, 2026

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INFOTECH 2026

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P R E F A C E

This year marks the 41st edition of INFOTECH 2026, a regular annual international scientific and professional conference in the field of the development and application of information technologies.

Throughout its long tradition, INFOTECH has continuously followed global technological trends and emerging challenges in the field of information and communication technologies. This year is no exception; the dominant theme addressed in more than half of the presented papers is the growing impact of artificial intelligence (AI) across engineering, project management, cybersecurity, analytics, and intelligent business operations.

A total of 27 papers (2 invited and 25 accepted) are published in the Book of Abstracts. They are classified according to their subject matter into five sections: Invited Keynote Lectures, AI Engineering and Intelligent Systems, AI for Project and Delivery Management, Responsible AI Systems and Cybersecurity, and Digital Transformation, Analytics and Intelligent Operations.

The tradition continues, and this year INFOTECH also featured authors from abroad - USA, UAE, Germany, Libya, Slovenia, Croatia, Montenegro, and Bosnia and Herzegovina.

The INFOTECH 2026 Proceedings will be published after the review process is complete. Both INFOETCH publications (Book of Abstracts and Proceedings) will have open access status and will be available on the INFOTECH website.

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INFOTECH 2026 INVITED KEYNOTE LECTURE

NETWORK DIAGRAM AS A TOOL IN AGILE PROJECT PLANNING

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Abstract: Network diagram is a well-known scheduling tool in project management. It enables sequencing of tasks and determining the exact schedule of tasks based on predecessors between tasks. Additionally, network diagram enables defining critical and non-critical paths which helps in determining the start and end of activities and the overall project. This tool is widely used in traditional waterfall project planning.

When it comes to agile project planning, Kanban board is one of the tools used. This tool enables prioritization of tasks and limitation of work in progress. However, this tool has a limitation because it does not enable adequate sprint planning in the context of tasks planning through the identification of predecessors and complexity of tasks. Therefore, this study proposes the use of network diagram as a traditional tool in sprint planning of agile projects. This paper will show the possibility of applying network diagram in agile sprint planning based on the identification of predecessors and work in progress limits expressed through story points.

Keywords: Network diagram, Agile project planning, Sequencing tasks, Story points.

INFOTECH 2026 INVITED KEYNOTE LECTURE

AI SECURITY PARADOX: WHEN THE SAME TECHNOLOGY BOTH PROTECTS AND THREATENS US

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Abstract: The paper analyzes the dual nature of AI systems in the security context. On the one hand, AI enables automated threat detection, predictive analytics, more efficient risk management, and real-time decision-making support. On the other hand, the same technology enables the development of deepfake manipulation, automated cyberattacks, social engineering, disinformation campaigns, supply chain attacks, and the misuse of generative models for criminal and hybrid activities. Special attention is given to how organizations, states, and security systems can use AI as a protective tool while simultaneously controlling the risks produced by that same technology. The paper examines challenges related to accountability, transparency, algorithmic control, dependence on commercial AI platforms, and the need to develop AI governance models that integrate technological, legal, organizational, and security aspects. The paper concludes that the future of security will not depend solely on the speed of AI adoption, but on society's ability to establish a balance between innovation and control. The AI security paradox is therefore not merely a technological issue, but a strategic challenge for modern risk management, crisis management, and system resilience.

Keywords: Artificial intelligence, Security, AI risks, Cybersecurity, Deepfake, Critical infrastructure, Risk management, System resilience.

ENGINE FOR DISCOVERY OF PERSONAL DATA BASED ON MACHINE LEARNING: AN EXTENDED STUDY

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Abstract: Although there were many previous privacy laws in existence before, GDPR has brought privacy topics in the regulatory spotlight. Many other countries have followed the EU with the adoption of similar legislation. Personal data management processes in companies, especially those related to data collected, stored and processed in IT Systems, need to be in line with regulatory requirements. Personal data discovery in IT systems refers to the process of identifying and cataloguing personal data across an organization's digital infrastructure. It involves scanning databases, file systems, and applications to locate sensitive information such as names, addresses, or financial details. By automating this process, organizations can better understand their data landscape, manage risks, and ensure proper handling of personal identifiable information. Personal data discovery is a critical first step for any later activity related to the personal data in IT systems in organizations. This paper is an extended study of the design of the personal data discovery engine, process flows and how main modules and their functionalities were implemented.

Keywords: Data privacy, Personal data discovery.

A FRAMEWORK PROPOSAL FOR AI/ML MODELS ON
DYNAMIC DECISION-MAKING FOR SERVICE SCALING,
ROUTING AND LOAD SCHEDULING

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Abstract: The increasing complexity of cloud-native systems introduces significant challenges in managing dynamic workloads, particularly in service scaling, request routing, and resource scheduling. Traditional heuristic-based approaches are often insufficient in environments characterized by high variability and unpredictability, leading to increased latency, inefficient resource utilization, and higher operational costs. This paper proposes a unified artificial intelligence and machine learning (AI/ML) framework for dynamic decision-making in distributed systems. The framework integrates supervised learning for workload prediction with reinforcement learning for adaptive optimization, enabling coordinated control across scaling, routing, and scheduling processes. By combining predictive and adaptive capabilities, the approach supports proactive and efficient system management under dynamic conditions. The framework is designed with a modular architecture and integrates with existing orchestration platforms, making it suitable for modern cloud-native environments. A theoretical analysis highlights its potential to improve system responsiveness, stability, and overall operational efficiency.

Keywords: Microservices, Resource management, Service scaling, Request routing, Load scheduling.

CURRENT TRENDS IN AI AUGMENTED PROGRAMMING

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Abstract: AI is stress-testing organizations that only a few years ago adopted an agile way of working in some form. In the VUCA environment, when global uncertainty is omnipresent, and where there is a real need for a blend of both agile practices to overcome those uncertainties and the need for the introduction of AI to stay competitive and deliver fast and cheap, there are natural clashes between agile and AI. Role borders are becoming shady, and we see migration of agile coaches to the AI implementers. We will consider the root causes of this and give some possible ways to overcome them.

Keywords: Agile, AI, Agile coach, Agile transformation, AI introduction.

PREDICTIVE MODELING OF THE WORKFORCE ATTRITION

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Abstract: This paper introduces and presents an innovative machine learning based solution for the workforce attrition prediction problem. The huge impact of the workforce attrition on the hi-tech sector operations motivated this research. Managerial and financial burdens associated with this issue are treated and quantified, as the attrition model is defined and designed in a specific ML framework. Different approaches for solving the problem are briefly analyzed, and one original approach based on modern ML algorithms is presented. Simulations were run, and the promising results are presented.

Keywords: Workforce attrition, Predictive modeling, Machine learning, Metaheuristics.

FISHEUTRUST INFORMATION PLATFORM FOR END-TO-END
TRACEABILITY AND TRUST IN SEAFOOD, INTEGRATING
NOVEL IOT AND SAFETY CONTROL AND SENSING

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Abstract: The FishEUTrust information platform is a modular, extensible system that delivers end-to-end digital traceability and advanced safety monitoring and assurance - all increasing stakeholder trust in seafood value chains, from breeding to final consumption. It integrates most comprehensive batch-centric lifecycle tracking, interoperable data models, and rich analytics with novel IoT bio- and nano-sensors and safety control methods detecting freshness and levels of critical contaminants (biotoxins, pathogens, antibiotics), exposed via Digital Product Passports, data exchange APIs and gamified interfaces. The platform features immutable management of batches and high-frequency heterogeneous measurements from the new freshness and contaminant biosensors, microbiome and isotopic tools, as well as from industry-proven aquaculture sensing platforms such as OxyGuard Cobália. The data streams comply to, and extend, relevant standards (ISO 12877/18538, GS1/EPCIS), with audit logging and DLT-based integrity ensuring critical traceability and safety records. Deployed and validated with stakeholders in 5 FishEUTrust project Living Labs (in the Atlantic, the Mediterranean, Adriatic, and North Sea), the platform demonstrates support for upcoming EU food policy and digital traceability obligations, provides integrated contextual nutritional and carbon-footprint metrics, all in a showcase next-generation interoperable and backward-compatible turnkey infrastructure for regulators, industry and consumers seeking trustworthy, evidence-based full sea-to-fork information.

Keywords: Seafood traceability, IoT biosensing, Digital product passport, DLT data integrity, Consumer trust.

MODULAR ARCHITECTURE
OF DECISION TREE ALGORITHMS IN MODERN
ARTIFICIAL INTELLIGENCE SYSTEMS

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Abstract: This paper explores the applicability of a component-based approach to the analysis and design of decision tree algorithms. The underlying assumption is that algorithms such as Iterative Dichotomiser 3 (ID3), C4.5, Classification and Regression Trees (CART), Chi-squared Automatic Interaction Detection (CHAID), and Quick, Unbiased, Efficient Statistical Tree (QUEST) can be viewed not only as self-contained algorithmic solutions but also as collections of functional components responsible for attribute selection, split criterion evaluation, stopping conditions, pruning strategies, missing value handling, and result interpretation. Such an approach enables a deeper understanding of the internal structure of decision tree algorithms and opens opportunities for the development of modular, hybrid, and interpretable Artificial Intelligence (AI) systems. Particular attention is devoted to relating the component-based paradigm to contemporary research areas, including Explainable Artificial Intelligence (XAI), Automated Machine Learning (AutoML), Machine Learning Operations (MLOps), and distributed AI architectures. The paper has a conceptual character and outlines potential directions for further research and practical applications of modular decision tree architectures in modern intelligent information systems.

Keywords: Machine learning, Decision trees, Modular AI, Explainable AI, AutoML.

BEYOND AUTOMATION: WHAT ANTHROPIC'S MYTHOS MEANS FOR DELIVERY MANAGERS

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Abstract: The emergence of agentic artificial intelligence is transforming the role of delivery managers beyond traditional automation and productivity support. Frameworks such as Anthropic's Mythos introduce AI systems capable of contextual reasoning, adaptive collaboration, and real-time operational assistance, opening new possibilities for project and delivery management in Agile and hybrid environments. This paper explores how AI-enhanced systems can support delivery managers in planning, risk detection, workload balancing, reporting, and decision-making. Through practical delivery scenarios, the paper analyzes the shift from task automation toward AI-driven decision-support ecosystems that augment human leadership rather than replace it. The findings suggest that delivery managers will increasingly act as orchestrators of human-AI collaboration, focusing on strategic interpretation, communication, and governance. The paper also emphasizes the importance of Human-in-the-Loop principles and alignment with ISO/IEC 42001 to ensure responsible and transparent adoption of AI systems in operational environments.

Keywords: Artificial intelligence, Delivery management, Agentic AI, Anthropic mythos, Agile management, Human-in-the-loop, ISO/IEC 42001.

CONDUCTING AN IT AUDIT
AND ASSESSMENT OF INFORMATION SYSTEMS
MATURITY IN INNOVATIVE COMPANIES

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Abstract: Innovative companies are organizations build their competitive advantage through the continuous development of new products and services, implemented through new business models and technological solutions. Key objectives of innovative companies include accelerating innovation processes, enhancing market competitiveness, improving customer experience, and achieving sustainable growth. To achieve their objectives, these innovative companies use digital technologies, which play a crucial role in supporting business operations and decision-making. However, the use of IT and new solutions also increases exposure to IT and business risks such as cyberattacks, data loss or compromise, regulatory non-compliance, business disruptions, and ineffective IT resource management. In these companies, IT audit represents an important mechanism for assessing the effectiveness of controls, risk management practices, and the alignment of information systems with organizational objectives. Maturity models provide a structured approach for evaluating the current state of processes and information system capabilities, identifying weaknesses, and defining improvement initiatives. Through the combined application of IT audit and maturity models, innovative companies can strengthen information systems governance, improve resilience to technology-related risks, and achieve higher levels of operational efficiency and digital transformation. Consequently, the achievement of these objectives contributes to an increase in market value and a further enhancement of customer satisfaction.

Keywords: IT audit, Maturity models, Information systems, Innovative companies, Risk management.

AI IN DAILY PROJECT WORK: AUTOMATING THE ROUTINE, ENHANCING THE STRATEGIC

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Abstract: The rapid development of Artificial Intelligence (AI) tools has significantly influenced modern project management practices, particularly in the automation of repetitive administrative tasks. This paper presents a case study focused on evaluating the practical impact of AI-assisted tools in everyday project management activities. The study compares traditional manual execution of project management tasks with AI-supported execution using tools such as ChatGPT, Microsoft Copilot, Notion AI, and Jira Assistant. Six typical project management scenarios were analyzed: sprint status reporting, risk register updates, stakeholder communication, sprint planning prioritization, retrospective summarization, and resource load analysis. The primary objective was to assess differences in execution time, output quality, and perceived usefulness between manual and AI-supported approaches. Preliminary findings indicate that AI tools significantly reduce time spent on operational and repetitive activities while simultaneously improving consistency, readability, and structure of generated outputs. The results also suggest that AI adoption enables project managers to allocate more time toward strategic decision-making, stakeholder engagement, and risk management. The paper contributes to the growing discussion on AI integration in project management by providing a practical, experience-based evaluation of current AI capabilities in real-world project environments.

Keywords: Artificial intelligence, Project management, Automation, Agile, Productivity.

CHALLENGES IN IMPLEMENTING AUGMENTED REALITY SOLUTIONS ON SMART GLASSES

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Abstract: This paper explores the practical challenges of developing augmented reality (AR) software for the rapidly evolving landscape of smart glasses, drawing directly from extensive, real-world implementation experiences. The primary technical hurdle stems from severe hardware fragmentation and modest computational capabilities across cross-platform, multi-brand ecosystem devices. Currently, smart glasses vary drastically in their hardware profiles; some premium variants feature advanced optical displays and cameras, while others entirely lack integrated screens or basic inertial sensors. To counter this extreme architectural heterogeneity, this research highlights a flexible software design methodology rooted in graceful degradation. This strategy ensures a full-scope application experience on high-end configurations while seamlessly falling back to essential core functionalities on resource-constrained hardware. Furthermore, to power an effective on-device AI assistant, the architecture must intelligently combine local, offline GIS data for reliable, low-latency spatial orientation with cloud-based online knowledge bases for real-time contextual intelligence. Ultimately, this study provides a foundational architectural roadmap for developers navigating volatile hardware constraints and hybrid data environments on the wearable frontier.

Keywords: Augmented reality, Smart glasses, Graceful degradation, AI assistant, Offline GIS.

FROM AGILE THEATER TO AI REALITY

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Abstract: AI is stress-testing organizations that only a few years ago adopted an agile way of working in some form. In the VUCA environment, when global uncertainty is omnipresent, and where there is a real need for a blend of both agile practices to overcome those uncertainties and the need for the introduction of AI to stay competitive and deliver fast and cheap, there are natural clashes between agile and AI. Role borders are becoming shady, and we see migration of agile coaches to the AI implementers. We will consider the root causes of this and give some possible ways to overcome them.

Keywords: Agile, AI, Agile coach, Agile transformation, AI introduction.

APPLICATION OF ARTIFICIAL INTELLIGENCE IN PROJECT MANAGEMENT OF AN UNDERWATER RESTAURANT CONSTRUCTION PROJECT

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Abstract: Underwater construction represents one of the most demanding contexts for project management due to unpredictable weather conditions, limited access to specialized resources, and high operational costs. This paper explores how AI tools can support project managers in planning, monitoring, and controlling projects in such environments. The study focuses on a simulated underwater construction project structured according to the Waterfall methodology. Four key project management challenges were identified: inaccurate activity duration estimation, inefficient task allocation, communication delays, and slow risk identification. To address these challenges, several AI-based solutions were analyzed. AI duration estimation was supported through machine learning models based on transfer learning, while task allocation optimization was performed using the K-means clustering algorithm. Communication efficiency was improved through AI-driven voice and text assistance, and early warning systems were applied for proactive risk identification. The analysis combined findings from scientific literature and analogous case studies. Results indicate that AI solutions can reduce activity duration estimation errors below $\pm 15\%$, shorten response times from hours to minutes, and lower rework and administrative effort. The paper also highlights the importance of Human-in-the-Loop principles and compliance with ISO/IEC 42001 to ensure responsible and trustworthy implementation of AI systems in high-risk project environments.

Keywords: Artificial intelligence, Project management, Underwater construction, Machine learning, Transfer learning, Human-in-the-Loop.

RESPONSIBLE USE OF ARTIFICIAL INTELLIGENCE IN REAL-TIME FINANCIAL DECISION-MAKING SYSTEMS

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Abstract: Artificial Intelligence (AI) increasingly supports decision-making in real-time financial environments. Despite improvements in speed, predictive capability and operational efficiency, growing dependence on AI systems introduces critical concerns regarding explainability, transparency, trust and accountability. This paper proposes a governance framework for responsible AI deployment in real-time financial decisioning by integrating technological, organizational and ethical perspectives. Drawing on explainable AI, managerial trust and governance literature, we demonstrate how SHAP- and LIME-based interpretability mechanisms can be embedded directly into low-latency pipelines while preserving system throughput. A Responsible AI Governance Model (RAGM) is introduced, encompassing technical, governance and trust-and-adoption layers. Benchmark results indicate technical feasibility within millisecond-level execution constraints applicable to credit scoring, fraud detection and algorithmic trading environments.

Keywords: Artificial intelligence, Real-time decision-making, Explainable AI, Financial governance, Managerial trust.

COGNITIVE BIASES IN THE AGE OF AI:
TRANSFERABILITY OF HUMAN BIASES TO LARGE
LANGUAGE MODELS AND THE EMERGENCE OF NOVEL
LLM-SPECIFIC BIASES

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Abstract: Large language models (LLMs) have rapidly evolved from experimental tools into infrastructure embedded in decision-making, content creation, and knowledge work. As systems trained on human-generated text, LLMs are expected to inherit patterns present in their training data — including cognitive biases documented in decades of psychological and behavioral economics research. The central research question is: which human cognitive biases transfer to LLMs, through which mechanisms, which biases are LLMs functionally immune to — and critically, do LLMs develop novel biases with no human analogue? Existing research predominantly addresses societal and gender biases, while the transferability of cognitive biases and the emergence of genuinely new, LLM-specific biases remain underexplored. This paper proposes a theoretically grounded four-category taxonomy: (1) statistically transferred biases absorbed from training corpora; (2) structurally induced biases amplified by RLHF; (3) biases to which LLMs are functionally immune due to absent evolutionary substrates; and (4) emergent biases — systematic deviations with no known human analogue, arising as unintended consequences of fine-tuning for chatbot applications. We identify three emergent candidates: omission bias, negation bias, and positivity bias. To investigate these phenomena empirically, we present a pilot experimental framework using LLMs as participants — testing five targeted biases across four state-of-the-art models with standardized scenarios. Findings contribute to AI alignment research and raise new questions about the nature of machine cognition.

Keywords: Cognitive biases, Large language models, RLHF, Emergent biases, Sycophancy, AI alignment, LLM-as-Participant.

SHADOW AI AS A CHALLENGE FOR INFORMATION SECURITY IN ORGANIZATIONS

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Abstract: Shadow AI represents an emerging challenge for information security in modern organizations, referring to the use of artificial intelligence tools, applications, and services without formal approval, governance, or oversight. As employees increasingly use generative AI and other AI-based tools in daily activities, organizations face risks related to confidentiality, integrity, privacy, regulatory compliance, intellectual property protection, and uncontrolled data sharing. This paper explores Shadow AI as a specific information security risk and analyzes its impact on organizational control mechanisms, risk management, and data protection practices. Special attention is given to the possibility that sensitive business information, personal data, client data, source code, internal documents, and strategic knowledge may be exposed through uncontrolled AI tool usage. The paper highlights that Shadow AI cannot be managed only through technical restrictions, but requires a systematic governance approach based on clear policies, employee awareness, risk assessment, supplier evaluation, access control, monitoring, and incident management. The analysis emphasizes the importance of ISO/IEC 42001 and ISO/IEC 27001 standards in defining governance structures, risk-based controls, transparency requirements, and continuous improvement mechanisms related to AI systems. By implementing formal AI governance models, organizations can reduce Shadow AI risks while enabling responsible and secure AI adoption.

Keywords: Shadow AI, Artificial intelligence, ISO/IEC 27001, ISO/IEC 27701, ISO/IEC 42001, AI governance, Privacy information management.

SOFTWARE DEPENDENCY AND PACKAGE
VULNERABILITIES AS FACTORS OF INSECURE CODE IN
AGENTIC AND VIBE CODING PRACTICES

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Abstract: In this paper, we examine how software dependency and package vulnerabilities contribute to insecure code and AI-assisted development. We focus primarily on agentic and vibe coding practises. Reviewed literature shows that vulnerable, outdated, or poorly maintained packages act as risk multipliers, enabling insecure API usage, unsafe configuration, and injection-prone patterns to enter generated code. Agentic workflows further amplify these risks through autonomous package recommendation, planning, and iterative refinement while vibe coding frequently includes code generation with unsafe defaults. The paper concludes that secure AI-assisted development requires vulnerability-aware dependency selection, maintenance, and supply chain trust checks. Human review of the selected packages that will be included in the code is highly recommended.

Keywords: *Agentic Coding, Vibe Coding, Software Dependency, Vulnerabilities, Responsible use.*

DIGITAL ORGANIZED CRIME:
HACKER GROUPS AS THE NEW MAFIA?

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Abstract: In the era of digitization, organized crime is evolving and moving from the physical to the virtual space, where hacker groups are assuming a key role as a new form of "digital mafia". This paper examines the structure, methods, and goals of hacker groups through the lens of classic characteristics of organized crime, including hierarchy, stable internal organization, extended operations, and economically motivated goals. Using a comparative and interdisciplinary method, examples of cyber-attacks, extortion (ransomware), data theft, financial fraud and the use of cryptocurrencies as mechanisms for making criminal profits are analyzed. The aim of the work is to point out the growing importance of digital organized crime, as well as the insufficient legislative and institutional preparedness to face these challenges. The conclusion emphasizes the need for legal compliance at the international level, improving capacities in the field of cyber security, as well as developing preventive strategies through education and cooperation between state and non-state actors.

Keywords: Digital crime, Hacker groups, Organized crime, Cyber security, Ransomware, Cryptocurrencies, International cooperation.

APPLICATION OF ZERO TRUST ARCHITECTURE IN IMPROVING INFORMATION SYSTEMS SECURITY

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Abstract: In recent years, organizations have become more and more dependent on digital technologies and internet services for daily activities. Information systems are used for communication, remote access, data storage, and many other business activities. These technologies improve the efficiency of business processes, but they also increase cybersecurity risks and the possibility of cyber attacks. Most traditional security approaches are based on the assumption that users and devices inside the network can be trusted. Despite this, current cyberthreats have demonstrated that this strategy is frequently insufficient, particularly in settings that make use of cloud services and remote work options. Because of this, organizations are looking for security models that provide better control over users, devices, and access to sensitive information. One strategy that has gained importance in recent years is zero trust architecture. This concept is predicated on the notion that no person or device, whether within or outside the network, should be immediately trusted. The primary tenets of Zero Trust architecture, such as network segmentation, multi-factor authentication, and access control are the subject of this study. The article also addresses some of the benefits and difficulties of applying this paradigm in contemporary businesses. The goal of this paper is to demonstrate how crucial contemporary cybersecurity techniques are to enhancing information systems security and lowering security threats.

Keywords: Zero Trust architecture, Cybersecurity, Information systems, Authentication, Access control.

PLACE AND ROLE OF ARTIFICIAL INTELLIGENCE
IN SELECTED STRATEGIC DOCUMENTS
FOR INDUSTRIAL DEVELOPMENT

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Abstract: MAIn vision and intentions for future development of any kind of organizational issue are, or should be declared in a document called strategy. From here, from strategy, begins creation of implementation plans, defining new laws, norms and standards. Ideally, strategy should clearly state what are interests, values, means and ways available and appropriate to realize desired goals. In case of AI challenge as well, strategic documents consider what place and roles are given to the trend of implementing and developing of artificial intelligence in several novel strategic documents. Strategic documents considered here are chosen based on their novelty and relevance, and those are industrial and AI strategies from BritAIn, France, Slovenia and Serbia. Main intention is to analyse foreign experience in dealing with AI challenge, distil caveats and use lessons for own purpose.

Keywords: Strategy, Strategic management, Artificial intelligence, Industry, Project management.

OPERATIONALIZING ELECTRONIC PATIENT-REPORTED
OUTCOMES IN ONCOLOGY:
WAVE HEALTH REAL-WORLD EVIDENCE FROM SERBIA

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Abstract: This paper presents the implementation and evaluation of electronic patient-reported outcomes (ePRO) platform Wave Health in routine oncology care in Serbia. The objective was to assess feasibility, usability, and clinical workflow integration in a real-world setting. An 18-week pilot was conducted at a tertiary care center, involving patients with lung, breast, and prostate cancers. A total of 203 patients were registered, of whom 153 (75%) were successfully onboarded. During a 12-week monitoring period, 815 weekly symptom reports were completed with an average completion time of 3 minutes 18 seconds. Healthcare providers reviewed 95% of submitted reports, demonstrating strong adherence to clinical workflows. Operational efficiency was reflected in rapid onboarding (2 minutes 19 seconds per patient) and low weekly review burden (less than 2 minutes per patient). The results confirm that ePRO systems can be effectively integrated into oncology care with high patient engagement and clinician adoption. The study provides a practical model for scalable digital health implementation in oncology and similar healthcare settings.

Keywords: ePRO, Oncology, Real-world evidence, Digital health, Patient monitoring.

DATA-DRIVEN GAMIFICATION INCREASING KNOWLEDGE AND TRUST IN AQUACULTURE VALUE CHAINS – A PRACTICAL WORKING EXAMPLE

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Abstract: The presented data-driven simulation problem-solving game works over a simplified aquaculture value chain model and realistic data and metadata from the underlying FishEUTrust traceability and trust information platform to increase knowledge and trust in (primarily farmed) seafood traceability, sustainability, and safety. Implemented as a cross-device Progressive Web App. integrated with the platform through a configurable rule engine, the game features adjustable virtual sensing parameters across breeding, transport, and trading stages to value-chain outcomes such as fish mortality, welfare, price and quality, with severity logic encoded declaratively and evaluated against expert-defined rules. Players diagnose and correct sub-optimal conditions in managing chain stages, using moves driven by a Learn-and-Earn with questions semi-automatically generated from platform knowledge and datasets (from aquaculture domain-specific to nutritional and sustainability), all supported by real-time visual feedback and color-coded parameter severity. Gameplay data (scores, leaderboards, session statistics) integrated with the platform backend enable the monitoring and evaluation of learning effects and effectivity of improvement of value-chain conditions. The game is available online, being disseminated through specialized workshops and events, and positively evaluated for the ability to communicate complex monitoring and traceability concepts in an accessible, configurable format adaptable to other product chains.

Keywords: Data-driven gamification, Aquaculture value chain, Trust seafood safety, Serious game, Consumer education.

THE ROLE AND TECHNOLOGIES OF VIRTUAL WAREHOUSES

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Abstract: Virtual warehouses represent a modern model for managing logistics processes based on the application of information technologies, cloud systems, and digital platforms. Their implementation enables the integration of various storage capacities into a single system that provides real-time monitoring of inventory and goods flows. The aim of the paper is to analyze the concept of virtual warehouses, the key technologies that enable their application, as well as to examine the prospects for their further development in modern supply chains. Special attention is paid to the application of cloud systems, WMS solutions, the Internet of Things (IoT), artificial intelligence, and digital twin models, which contribute to the automation, greater efficiency, and optimization of logistics processes. The paper also presents the example of Amazon as one of the most significant examples of a successful implementation of virtual warehouses and digitized logistics management. The results of the analysis indicate that virtual warehouses enable cost reduction, greater business flexibility, improved transparency, and increased competitiveness for organizations. It is concluded that the further development of digital technologies will further accelerate the transformation of logistics and contribute to the creation of autonomous and intelligent supply chain management systems.

Keywords: Virtual warehouses, Cloud systems, IoT, WMS, Artificial intelligence.

THE ROLE OF DIGITAL TECHNOLOGIES IN THE ECONOMIC EMPOWERMENT OF WOMEN

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Abstract: Digital technologies play an increasingly important role in enhancing the economic empowerment of women by improving access to education, the labor market, financial services, and entrepreneurial opportunities. The aim of this paper is to analyze the impact of digitalization on the economic position of women, with particular emphasis on the development of digital skills, remote work, e-commerce, and the use of information and communication technologies in modern business. The paper highlights the importance of digital platforms as tools for reducing gender inequalities and increasing women's financial independence. Special attention is given to the challenges women face in the process of digital transformation, including the digital divide, insufficient education, and limited access to resources. It is concluded that digital technologies represent an important factor in economic development and women's inclusion; however, institutional support, education, and the development of inclusive policies are necessary for their full affirmation.

Keywords: Digital technologies, Digital skills, Economic empowerment.

INFLATION FORECASTING IN SERBIA: EVIDENCE THAT SIMPLER MODELS MAY PERFORM BETTER

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Abstract: Four machine learning algorithms are applied and compared to forecast the inflation rate in Serbia, more accurately the Consumer Price Index (CPI). Among them, the simplest one, the Ridge Regressor, was the only one which produced the good result, both with R2 indicators and backtesting.

Keywords: Algorithm, Forecasting, Inflation, Machine learning, Regression, Time series.

WEAK SIGNAL IN ETF SELECTION: EVIDENCE FROM EQUITY AND BOND ETFs

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Abstract: This paper presents a practical application of machine learning to assist an investor in selecting between two exchange-traded funds (ETFs). The investment scenario assumes that an investor has a fixed amount of capital and intends to maximize returns over a two-year period. Historical market data for two ETFs are obtained: one tracking the S&P 500 equity index and another tracking U.S. Treasury. Instead of attempting long-term ETF prices forecasting, which is known to be highly uncertain, the problem is formulated as a binary classification task. For each historical date, the model determines which ETF would have produced a higher return over the following two years. A baseline classifier and additional engineered features are introduced in order to evaluate model performance and improve predictive capability. The proposed framework illustrates both the potential and the limitations of machine learning in practical financial decision-making scenarios. The results show that, despite high training accuracy, three chosen classifiers fail to outperform the trivial baseline on the test set. This indicates that the predictive signal contained in the input features is insufficient for reliable decisionmaking, highlighting a limitation of the approach.

Keywords: Classification, ETF, Financial data, Investment decision, Machine learning.

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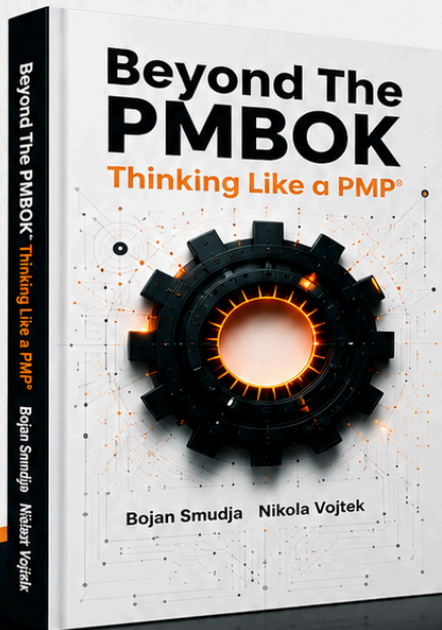
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