L0_Loan Rosseeuw:

1st article:

Investigated the impact of digital transformation on Business Process Management (BPM) with a focus on the pivotal role of machine learning (ML) and artificial intelligence (AI) in process optimization and automation.
Positioned within the context of the 4.0 digitalization era, emphasizing trends such as Smart Factory, Internet of Things, and Cloud Computing as drivers of change.
Advocated for the adoption of ML and AI to address challenges posed by Big Data and evolving supply chain dynamics, aiming to reduce response times and errors in BPM.
Provided clarity on key concepts including digital transformation, BPM, AI, and ML, distinguishing between strong and weak AI and explaining ML's role in knowledge extraction from data.
Conducted empirical research involving a survey and shadowing of 25 digital companies in Germany to assess ML and AI utilization in BPM.
Key findings highlighted the high demand for ML and AI in BPM, particularly for process optimization, and revealed a gap between perceived and actual effectiveness of BPM and process automation.
Concluded with actionable recommendations, emphasizing the strategic adoption of ML and AI for targeted process automation as crucial for success in the digital era.
Overall, the paper contributes valuable insights into the intersection of digital transformation, BPM, and ML/AI, offering practical recommendations for companies navigating modern business environments.

2nd article:

This paper presents a method for automating the creation of user interface components tailored to data stored in Enterprise JavaBeans (EJB)-based data models. Leveraging the Java 2 Platform, Enterprise Edition (J2EE), the approach simplifies the development of data-intensive applications by providing standard middleware services. It introduces the concept of Intermediate Form Representation (IFR), which abstracts form functionality and layout into XML documents, allowing developers to generate equivalent user interfaces for various client environments without code rewriting. The process involves generating session bean facades for each entity bean in the data model, exposing basic data operations to client forms. The paper reviews related work in model-based user interface development environments, outlines the architectural design of EJB-based systems, and discusses existing tools for EJB component generation. It concludes by highlighting the benefits of the proposed code generation system, including rapid prototyping of applications and support for legacy relational databases through CMP entity bean layers. Future research directions include designing a visual, multi-environment IFR document editor to further accelerate application development in the J2EE realm.

3rd article:

Authored a paper advocating for the adoption of data-driven approaches, specifically leveraging big data analytics, machine learning (ML), and artificial intelligence (AI), to optimize operations in next-generation wireless networks.
Emphasized the need for a paradigm shift towards proactive, self-aware, and predictive networking to address the increasing complexity and diverse service requirements of modern wireless networks.
Discussed the pivotal role of ML and AI in achieving self-awareness, adaptability, and proactiveness in network management, highlighting their capability to systematically analyze large datasets and facilitate intelligent decision-making.
Presented tailored network design and optimization schemes enabled by ML and AI, aimed at improving network efficiency and user experiences.
Examined the challenges and benefits associated with the adoption of big data analytics, ML, and AI in wireless networks, emphasizing their crucial importance in shaping the future of communication systems.

4th article:

This paper delves into automated code generation, emphasizing its importance in simplifying programming tasks, especially in web development. Leveraging Artificial Intelligence (AI) and Machine Learning (ML), the proposed system aims to efficiently convert hand-drawn design prototypes into HTML code. Through a modular architecture incorporating image processing, data preprocessing, and ML techniques, the system demonstrates robustness in generating accurate HTML structures. Key algorithms such as Bilingual Evaluation Understudy Score (BLEU) and image captioning play crucial roles in ensuring output fidelity. Despite challenges like handwriting recognition variability, the system showcases promising results, underlining the transformative potential of automation in web development workflows.
Introduction: The paper introduces various AI models and techniques, including image processing, natural language processing (NLP), computer vision (CV), and ML, within the context of automatic code generation. It emphasizes the significance of AI and ML advancements in recognizing and converting user inputs, particularly hand-drawn design prototypes, into HTML code efficiently.
Contribution to Proposed Idea: The AI models significantly contribute to the proposed idea by facilitating the translation of hand-drawn design prototypes into HTML code. Through modules such as Image Processing, Data Preprocessing, and Machine Learning, the system leverages AI technologies to overcome challenges such as handwriting recognition variability. Specific algorithms like BLEU scores and image captioning play crucial roles in evaluating output accuracy and extracting shapes and text from images, respectively. Overall, the integration of AI models enables the proposed system to streamline the web development process and enhance productivity.
Conclusion: In summary, the paper showcases the potential of AI and ML technologies in automating code generation tasks, particularly in web development. By integrating various AI models and algorithms, the proposed system offers promising results, paving the way for further advancements in automatic programming.

RESUME:

The articles examine the impact and integration of emerging technologies in various domains:
The first article focuses on using machine learning (ML) and artificial intelligence (AI) to optimize Business Process Management (BPM) within the scope of digital transformation. It highlights the challenges and opportunities associated with adopting these technologies, along with practical recommendations for businesses.
The second article proposes a method for automating the creation of user interfaces in Enterprise JavaBeans (EJB)-based applications, offering benefits such as rapid prototyping and support for existing databases.
The third article explores the application of big data analytics, ML, and AI to optimize operations in next-generation wireless networks, emphasizing the enhancement of efficiency and user experience.
Finally, the fourth article examines the use of AI and ML to automate HTML code generation from hand-drawn design sketches, illustrating the potential of these technologies to simplify web development.
Overall, these articles provide insight into the advantages and challenges associated with integrating emerging technologies into various sectors, while also highlighting practical recommendations for leveraging these advancements.