- **Name :** Loan Rosseeuw

- **Name of your Level :** L0

- **Paper title :** Automated Business process management - in times of digital transformation using machine learning or artificial intelligence

- **Source :** scholars.google.com

- **Keywords specific to the paper :** Artificial intelligence/ Data modeling

Summary : The paper discusses the impact of digital transformation on Business Process Management (BPM), emphasizing the role of machine learning (ML) and artificial intelligence (AI) in optimizing and automating processes. It begins by contextualizing the current stage of industrial evolution as the 4.0 digitalization era, marked by trends such as Smart Factory, Internet of Things, and Cloud Computing. In this landscape, BPM becomes crucial for companies to adapt to changing conditions and meet customer expectations.
The introduction outlines the necessity for companies to recognize and react to new competitive challenges in the digital age. Cloud computing and the Internet of Things are highlighted as key enablers of process management in the cloud, facilitating adaptability and analysis from anywhere.
In the face of Big Data and evolving supply chain dynamics, the paper argues for the importance of process management and automation to reduce response times and errors. It proposes ML and AI as solutions for agile, flexible, and automated BPM.
The scientific background section defines digital transformation, BPM, AI, and ML, providing clarity on key concepts. It distinguishes between strong and weak AI and explains the role of ML in generating knowledge from experience, particularly through supervised and unsupervised learning.
The research methodology involves a survey and shadowing of 25 digital companies in Germany to assess their utilization of ML and AI in BPM. The results highlight the prevalence of digital transformation in these companies, with a significant portion actively engaged in process optimization and automation.
Key findings include the high demand for ML and AI in BPM, especially for process optimization, and a gap between perceived and actual effectiveness of BPM and process automation.
In conclusion, the paper stresses the inevitability of digitization and the need for companies to leverage ML and AI for optimized process management. It emphasizes the importance of making smart decisions based on data and recommends targeted process automation as a critical success factor in the digital era.
Overall, the paper provides valuable insights into the intersection of digital transformation, BPM, and ML/AI, offering practical recommendations for companies navigating the complexities of modern business environments.

AI model used: Machine Learning and Artificial Intelligence

Introduction of AI models:

The paper introduces ML and AI as pivotal technologies for optimizing and automating business processes in the context of digital transformation. ML is discussed for its ability to extract knowledge from data through supervised and unsupervised learning, while AI is presented as a means of simulating human intelligence to enhance decision-making and automation.

Contribution to the proposed idea:

1. Identification of Key Technologies : The paper identifies ML and AI as essential components for modernizing business processes in the digital age, shedding light on their significance in driving efficiency and adaptability.

2. Addressing Challenges of Digital Transformation : By advocating for ML and AI in BPM, the paper addresses the challenges posed by digital transformation, offering solutions to cope with the complexities of evolving business landscapes.

3. Empirical Validation : Through the survey and analysis of 25 digital companies, the paper provides empirical evidence of the prevalence and demand for ML and AI in BPM, bridging the theoretical discussion with real-world applications.

4. Recommendations for Action : The paper concludes with actionable recommendations, emphasizing the strategic adoption of ML and AI for targeted process automation as a critical success factor in the digital era.

Overall, the paper contributes to the understanding of how ML and AI can revolutionize BPM in the face of digital transformation, offering insights and guidance for companies aiming to stay competitive in rapidly evolving markets.

- **Name :** Loan Rosseeuw

- **Name of your Level :** L0

- **Paper title :** BigData Analytics Machine Learning and Artificial Intelligence in Next GenerationWirelessNetworks

- **Source :** scholars.google.com

- **Keywords specific to the paper : Code generation/ Data modeling**

Summary: Next-generation wireless networks are becoming increasingly complex, requiring efficient resource utilization and adaptive management. Traditional networking approaches are inadequate for the diverse service requirements and network heterogeneity. To address these challenges, a paradigm shift towards proactive, self-aware, and predictive networking is essential. Leveraging big data analytics, machine learning (ML), and artificial intelligence (AI) enables network operators to optimize operations effectively. By systematically exploiting large amounts of data, these technologies facilitate intelligent decision-making and cost-effective optimization. This paper discusses the adoption of data-driven approaches in next-gen wireless networks, highlighting the role of ML and AI in achieving self-awareness, adaptability, and proactiveness. It presents network design and optimization schemes tailored to data analytics. Challenges and benefits of adopting big data analytics, ML, and AI are also discussed, emphasizing the importance of these technologies in future communication systems.

AI Model Used: The paper emphasizes the utilization of machine learning (ML) and artificial intelligence (AI) in the context of next-generation wireless networks. These technologies are instrumental in enabling networks to become proactive, self-aware, self-adaptive, and predictive.

Introduction of AI Models: The paper introduces ML and AI as essential components for transforming traditional networking approaches into proactive and intelligent systems. These technologies empower network operators to make informed decisions, optimize performance, and enhance efficiency by leveraging vast amounts of network-generated data.

Contribution to Proposed Idea: ML and AI contribute significantly to the proposed paradigm shift in networking. They enable networks to become self-aware, adaptive, and predictive, addressing challenges such as resource optimization, network management, and user experience enhancement. By systematically analyzing big data, ML and AI empower networks to handle the complexities of next-generation wireless communication effectively.

In summary, the paper highlights the pivotal role of ML and AI in driving the evolution of next-generation wireless networks towards proactive, self-aware, and data-driven systems. These technologies enable operators to harness network-generated data for informed decision-making, optimization, and improved user experiences, thereby ensuring the success of future wireless communication ecosystems.

- **Name :** Loan Rosseeuw

- **Name of your Level :** L0

- **Paper title :** Factors Involved in Artificial Intelligence-based Automated HTML Code Generation Tool

- **Source :** scholars.google.com

- **Keywords specific to the paper :** Code generation/AI

- Summary : This paper explores the realm of automated code generation, focusing on its significance in simplifying programming tasks, particularly for web development. Leveraging advancements in Artificial Intelligence (AI) and Machine Learning (ML), the proposed system aims to convert hand-drawn design prototypes into HTML code efficiently. 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 and image captioning play pivotal roles in ensuring output fidelity. Despite challenges like handwriting recognition variability, the system showcases promising results, highlighting the transformative potential of automation in web development workflows.

AI Model Used : The paper utilizes various AI models and techniques, including image processing, natural language processing (NLP), computer vision (CV), and machine learning (ML). Specific algorithms mentioned include Bilingual Evaluation Understudy Score (BLEU) and image captioning.

Introduction of AI Models : The paper introduces these AI models in the context of automatic code generation, emphasizing their role in simplifying programming tasks. It highlights 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 contribute to the idea proposed by the paper 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.

In summary, the paper demonstrates the potential of AI and ML technologies in automating code generation tasks, particularly in the context of web development. Through the integration of various AI models and algorithms, the proposed system offers promising results, paving the way for further advancements in automatic programming.

- **Name :** Loan Rosseeuw

- **Name of your Level :** L0

- **Paper title :** User Interface Code Generation For EJB-Based Data Models Using Intermediate Form Representations

- **Source :** scholars.google.com

- **Keywords specific to the paper :** Code generation / Data modeling

- **Summary of the main contributions :**

The use of the J2EE platform simplifies data-intensive application development by providing standard middleware services. EJB components are commonly used for implementing business logic, particularly to offer the same application functionality across various client types. This paper proposes a method for automating the generation of user interface components for data stored in EJB-based data models. These components, represented as coarse-grained forms, allow basic operations on sets of entity beans and can be deployed across multiple environments such as standalone GUI applications, web browsers, and wireless devices.

The key to this approach is the use of Intermediate Form Representation (IFR), which abstracts the functionality and layout of forms into XML documents. By leveraging IFR, developers can create equivalent user interfaces for different environments without rewriting code. The process involves generating session bean facades for each entity bean in the data model, which expose basic data operations to client forms. Additionally, IFR documents can be customized to tailor the functionality and layout of generated forms.

The paper reviews related work in model-based user interface development environments, emphasizing the lack of methods specifically tailored for EJB-based models. It also discusses the architectural design of EJB-based systems and existing tools for EJB component generation.

The generation process includes the creation of session bean facades and the structure of IFR representations, which define form functionality and layout. Forms support standard operations on beans such as addition, removal, update, copying, and query-by-form searching. Customization options include modifying form layouts and implementing custom code for additional operations.

The paper 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.