

## **Experiment 10: Case Study on AI Application published in IEEE**

**Paper Title:** Research on Applications of Artificial Intelligence in Business Management of Power Grid Enterprises

### **Introduction:**

The power grid industry is undergoing significant changes due to the integration of renewable energy sources and the need for more efficient and reliable energy delivery systems. Artificial Intelligence (AI) has the potential to transform the way power grid enterprises manage their business operations. This case study analyzes a research paper published in a prominent journal on the application of AI in the business management of power grid enterprises.

### **Background:**

The paper titled "Research on Applications of Artificial Intelligence in Business Management of Power Grid Enterprises" was authored by a team of researchers from a university in China. The paper discusses the challenges facing power grid enterprises in managing their business operations and proposes AI-based solutions. The paper highlights the potential benefits of using AI in power grid enterprise management, including improved efficiency, reliability, and cost savings.

### **Methodology:**

The researchers used a combination of data analysis techniques and machine learning algorithms to develop an AI-based business management system for power grid enterprises. The system was designed to analyze large amounts of data from various sources, including sensors, customer feedback, and social media, to identify trends and patterns that could be used to optimize business operations. The system was trained on a large dataset of historical data using various feature engineering techniques.

### **Results:**

The AI-based business management system was evaluated on a dataset of real-world data from a power grid enterprise in China. The system demonstrated the ability to identify trends and patterns in the data and provide recommendations for improving business operations, such as optimizing maintenance schedules, reducing downtime, and improving customer satisfaction. The system also demonstrated the ability to adapt to new data and improve its accuracy over time.

### **Applications:**

The AI-based business management system has numerous potential applications in power grid enterprise management. It can be used to optimize business operations, reduce costs, and improve customer satisfaction. The system can also be used to support decision-making by

providing real-time insights into business operations and identifying areas where improvements can be made.

**Discussion:**

The AI-based business management system has several strengths, including its ability to analyze large amounts of data and provide recommendations for improving business operations.

However, there are also limitations to the system, such as concerns about the accuracy and reliability of the data used to train the system and the potential for bias in the decision-making engine. There are also ethical and societal implications to consider, such as the potential impact of automation on employment in the power grid industry.

**Conclusion:**

The AI-based business management system is a promising application of AI in power grid enterprise management, but it is important to carefully consider its limitations and potential implications. Further research and development are needed to improve the accuracy and reliability of the system and to address ethical and societal concerns.

**References:**

B. Chai, Q. Zhang, Q. Chen, T. Zhao and K. Gao, "Research on Applications of Artificial Intelligence in Business Management of Power Grid Enterprises," 2019 IEEE 4th Advanced Information Technology, Electronic and Automation Control Conference (IAEAC), Chengdu, China, 2019, pp. 683-688, doi: 10.1109/IAEAC47372.2019.8997608