6-2 Assignment:

AI and IoT: Efficiency and Optimization of Industry Operations

Andrea Plunkett - Jackson

Southern New Hampshire University

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Dr. Francine Adams, EdD

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Asset tracking, or asset management, is a key process that helps companies keep an eye on their valuable physical assets. This tracking helps companies make their planning better, keep the right amount of inventory, and spot any problems. In the past, asset tracking was about sticking RFID or barcodes on the assets to know where they are (Some Interesting Use Cases - Hands-on Artificial Intelligence for IoT , n.d.). Yet now, with Artificial Intelligence (AI) algorithms, we can do more vibrant and dynamic asset tracking. For example, within the banking industry, there are numerous assets such as cash, securities, loans, buildings, and technology equipment. Keeping track of all these assets is crucial for the bank’s operations and regulatory compliance. With the help of AI and IoT technologies, each asset in the bank can be tracked in real-time. For instance, cash in ATMs can be monitored for replenishment needs, and the condition of the bank’s buildings can be tracked for maintenance requirements. This shows how AI and Internet of Things (IoT) technologies have changed the way things work in the energy industry.

Artificial Intelligence (AI) and the Internet of Things (IoT) have emerged as transformative forces in various industries, enhancing operational efficiency, enabling predictive capabilities, and assisting in strategic decision-making. AI is great at looking at an enormous amount of data, processing it in real-time to pull out useful info and patterns, and forecasting what will happen in the future. This data is key for AI to work, giving it the raw data it needs to do its analytical and projecting jobs.

When these two technologies come together, they boost each other’s abilities. The data made by IoT forms the base for AI’s work, while AI’s ability to analyze helps make the best use of IoT-made data. This give-and-take relationship between AI and IoT results in a system that works better and more efficiently, showing the immense potential of these technologies when they work collectively. This has led to big improvements in asset tracking, making it more lively, exact, and efficient. It is a clear sign of the substantial impact of AI and IoT technologies on various industries.

Asset management is a critical aspect when examining the influence of Artificial Intelligence (AI) and Internet of Things (IoT) on banking industry operations due to several reasons:

Efficiency and Accuracy: AI and IoT technologies have the potential to automate and streamline the process of tracking and managing assets, thereby reducing human error, and enhancing efficiency. For instance, AI algorithms can scrutinize data from IoT devices to monitor the status of physical assets and predict when maintenance is required.

Risk Management: Banks possess a variety of assets, encompassing loans and securities, which are associated with diverse levels of risk. AI can assist banks in managing these risks by analyzing market trends and predicting alterations that could impact the value of these assets.

Regulatory Compliance: Banks are obligated to comply with a spectrum of regulations, many of which involve the precise tracking and management of assets. AI and IoT can facilitate banks in meeting these requirements with greater ease and accuracy.

Real-Time Tracking: IoT devices can supply real-time data on physical assets, while AI can analyze this data as it is received. This enables banks to respond promptly to changes and make more informed decisions.

Cost Savings: By predicting when maintenance is necessary, banks can evade the cost of unexpected breakdowns and extend the life of their assets. This can result in substantial cost savings.

Both forecasting and asset management are vital components of banking operations, and the application of AI and IoT technologies can significantly enhance these processes.

In the banking industry, the term “load” can refer to the demand for various banking services or the usage of banking infrastructure. Forecasting and asset management, powered by AI and IoT, can be relevant:

Short-term forecasting: This could be utilized to predict the demand for banking services on a daily or weekly basis. For example, banks could forecast the number of transactions expected to be processed in the next few hours or days. This can assist in managing resources efficiently and ensuring smooth operations.

Medium-term forecasting: Banks could use this to plan for the next few weeks to months. For instance, if a bank anticipates a surge in loan applications in the forthcoming months, it can prepare by allocating more resources to handle the increased load.

Long-term forecasting: This is employed for strategic planning over months to years. For example, a bank might forecast the growth in demand for digital banking services over the next few years. This can guide decisions about investing in technology infrastructure and digital transformation initiatives.

While the term “load forecasting” is more commonly used in the context of energy demand (Electrical Load Forecasting in Industry - Hands-on Artificial Intelligence for IoT [Book], n.d.), the underlying concept of predicting future demand based on historical patterns and other relevant factors is widely applicable across industries, including banking.

In the future, as AI and IoT technologies continue to evolve, they are expected to further increase the production capacity in the banking industry. They will enable banks to process more transactions, serve more customers, and offer more services without significantly increasing their operational costs. This will be achieved through further automation of banking processes, more accurate prediction of market trends and customer behavior, and more efficient use of resources.

Resources

Some interesting use cases - Hands-On Artificial Intelligence for IoT [Book]. (n.d.). Www.oreilly.com. <https://learning.oreilly.com/library/view/hands-on-artificial-intelligence/9781788836067/8fc0d1cb-d7cc-4935-9656-5fd20ccd210a.xhtml>

‌ Electrical load forecasting in industry - Hands-On Artificial Intelligence for IoT [Book]. (n.d.). Www.oreilly.com. Retrieved June 14, 2024, from <https://learning.oreilly.com/library/view/hands-on-artificial-intelligence/9781788836067/1594697d-cbed-41f3-b49b-5830bfdd08f5.xhtml>

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