Observation of Aero-Revenue and Load-Cast Workflows Report - Week 3

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Duration: 30 hours

1. Overview of Activities

During the third week of my internship at JEDCO, I focused on observing the team's efforts on two major AI-powered forecasting initiatives: Aero-Revenue and Load-Cast. These projects aim to enhance financial and operational forecasting for aviation activities at Jeddah Airport. I also attended an internal IT session discussing system safety and email protection against cybersecurity attacks, which helped me understand the technical infrastructure supporting these projects.

2. Details of Aero-Revenue Observation

The Aero-Revenue project addresses the challenge of inaccurate revenue forecasting caused by market volatility, seasonality, and economic uncertainties. Traditional models often fail to capture such complex patterns.

From the shared project overview, I learned about:
- The problem statement, which highlights the importance of accurate financial forecasts.
- The proposed AI solution, which involves training ML models on historical financial statements and economic indicators.
- The types of data needed, including over 76 financial KPIs, GDP, inflation rates, and trends.

As a trainee, I reviewed these materials and proposed how machine learning models could be built using open-source tools like Python and Vertex AI. I also explored how models like LightGBM and time series models might suit this use case.

3. Details of Load-Cast Observation

Load-Cast aims to predict load factors (passenger occupancy rates) for airport operations using external factors like weather and events.

I learned:
- The problem statement, describing how load fluctuations affect staffing and resource management.
- The value proposition, including better gate allocation and pricing strategies.
- The required datasets, such as historical load rates, weather data, and seasonal events.

4. Reflection

This week enhanced my understanding of how data science and AI projects evolve from business needs into actionable models. Observing Aero-Revenue and Load-Cast helped me visualize the broader architecture of AI forecasting tools and the role of accurate, reliable data in successful AI adoption.

5. Key Takeaways

- Gained insight into how AI is used for forecasting financial and operational data in aviation
- Understood the data pipeline requirements and project scoping
- Learned how IT infrastructure and data security play a supporting role