

INTRODUCTION

Hi Everyone! I'm
Habib Fabri Arrosyid

Computer Science Student

Data Scientist

AI Engineer

Data Analysis

Data Engineer

Machine Learning
Engineer



ABOUT ME

Computer Science student specializing in **Applied AI** and **Data Engineering**, with deep expertise in architecting **Large Language Models (LLM)**, **Retrieval-Augmented Generation (RAG)**, and **Computer Vision systems**. I have successfully deployed high-impact solutions for maritime logistics and robotics, leveraging Python, SQL, and Automation workflows to transform raw data into operational intelligence. Combining technical rigor with a foundation in data-driven leadership, I am focused on engineering scalable, cutting-edge AI innovations.



Education

IPB University

GPA 3.57/4.00

2022 -2026 (expected)

Awards

- Best Poster at Datathon SSMI 2025
- Top 43 Big Data Challenge GAMMAFEST
- Top 68 Big Data Challenge SATRIA DATA 2024
- Semi-Finalist Business IT Case Competition HOOLOGY 6.0

Skill

- Technical : Machine learning, IOT, Computer Vision, Natural Language Processing, Generative AI, LLM, Data Analytics
- Language : Python, SQL, React, Shell bash
- Tools : N8n, Gemini API, Langchain, Looker Studio
- Leadership
- Problem Solving



ORGANIZATION EXPERIENCE

Head of Human Resource Development - Himpunan Mahasiswa Ilmu Komputer IPB

- Pioneered a **data-driven** performance evaluation system by architecting the organization's first-ever Key Performance Indicator (KPI) framework, ensuring objective assessment and talent mapping for 83 members.
- Revitalized academic engagement by implementing strategic internal campaigns, successfully **increasing member attendance** in academic seminars by 20% compared to the previous term.
- **Orchestrated** comprehensive talent development programs, focusing on leadership and soft skills to foster a high-performance organizational culture.

Academic Staff Data Mining Club IPB

- Co-developed technical curriculum, **simplifying complex data mining concepts into practical**, accessible learning modules.
- **Boosted** member participation by revamping academic materials to be more interactive, resulting in significantly higher engagement.

EXPERIENCE

PT. Salam Pasific Indonesia Lines Artificial Intelligence Engineer Intern

(Agustus 2025 - Desember 2025)

- Spearheaded the end-to-end development of three critical AI and automation projects, **successfully modernizing** maritime logistics and enhancing operational efficiency across multiple divisions.
- Engineered proactive intelligence hubs by leveraging **Large Language Models (LLM)**, Retrieval-Augmented Generation (RAG), and Google Gemini AI, integrated with automation tools like **n8n** and **LangChain**.
- Streamlined port and vessel operations by implementing real-time risk mitigation systems, directly enabling strategic, **data-driven decision-making** for complex logistical workflows.

Codingcamp Powered by DBS Foundation 2025

(Januari 2025 - Juni 2025)

Machine Learning Engineer Cohort

- Secured a position in a highly competitive Machine Learning bootcamp, selected as **one of the top 1,000 participants** from over 8,000 applicants (top 12%) to receive intensive mentorship and technical training.
- Co-developed 'FinBuddy', **as a chatbot developer**, a student financial management platform that analyzes user behavior habits and generates personalized savings recommendations to improve financial literacy.
- Engineered and deployed a customer service chatbot model, **successfully assisting in the technical integration** of the AI model into the web-based application environment

Computer Science Department IPB University

(Februari 2025 - Mei 2025)

AI Research Assistant

- Collaborated on developing a lightweight Computer Vision model specifically optimized for plant object detection on resource-constrained **Crazyflie-based drones**.
- Executed the data acquisition and preprocessing pipeline**, curating a comprehensive dataset of plant images to ensure robust model training and accuracy.
- Facilitated the embedded system integration**, successfully deploying the trained AI model onto the drone's hardware to enable real-time detection capabilities during flight.

MY PROJECT PORTFOLIO

I have a proven track record in Data Science projects, with a specific focus on Large Language Model (LLM) methodologies, including RAG frameworks, model optimization, and few-shot learning techniques. Additionally, I have contributed to the development of AIoT (Artificial Intelligence of Things) systems, integrating AI with IoT infrastructure to deliver practical, real-world solutions."



AUTOMATING PORT RISK ANALYSIS, BUILDING A REAL-TIME MONITORING SYSTEM WITH AI-DRIVEN INSIGHTS [\(link\)](#)

Challenge

- Operational vulnerability to critical weather conditions.
- Risk of costly downtime (e.g., crane shutdowns, berthing delays).

Solution

- Designed a real-time monitoring hub using **Looker Studio**.
- Built an automated pipeline via **n8n** to fetch and process weather data.
- Integrated **Google Gemini AI** to generate context-aware insights and risk alerts.

Impact

- Shifted operations from reactive to proactive risk mitigation.
- **Successfully prevented costly delays** in critical assets (cranes/berthing).

Tech Stack



COPILOT PENGAJUAN OPERASIONAL

SPIL Copilot Pengajuan Operasional Kapal Connected

Pertanyaan

Apa 5 alasan paling sering pada kolom obstacles untuk baris dengan persen < 0.2?

Port (opsional) cth: ADP / DSN Start date (opsional) dd/mm/yyyy End date (opsional) dd/mm/yyyy

Tanyakan

Jawaban (diringkas dari konteks dokumen mirip)

Tindakan yang disarankan:

- Berdasarkan data yang diberikan, 5 alasan yang paling sering muncul di kolom 'Obstacles' untuk baris dengan 'Persen' < 0.2 adalah:
- 1. **PELABUHAN MACET** (muncul 1 kali)
- 2. **BATAL TL** (muncul 2 kali)

Alasan:

- Analisis didasarkan pada frekuensi kemunculan setiap alasan di kolom 'Obstacles' untuk data yang memiliki nilai 'Persen' di bawah 0.2. Data yang diberikan terbatas, sehingga analisis ini hanya mencerminkan informasi yang tersedia.

Sumber: ADP | V19 | 2024-01-19 DSN | V01 | 2024-12-09 ADP | V24 | 2024-05-07 ADP | V03 | 2024-06-05 PERCA | V08 | 2025-05-06 Lihat semua

Recent Questions

Apa 5 alasan paling sering pada kolom obstacles untuk baris dengan persen < 0.2? Sebutkan 5 port dengan jumlah denaiuan total tertinggi di dataset urut menurun. kamu bisa apa

Challenge :

Fragmented vessel data led to slow response times in critical operations.

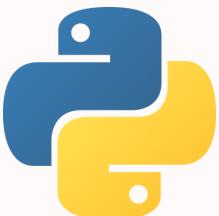
Solution :

- Accelerated decision support.
- Centralized verified company knowledge.
- Automated report validation.

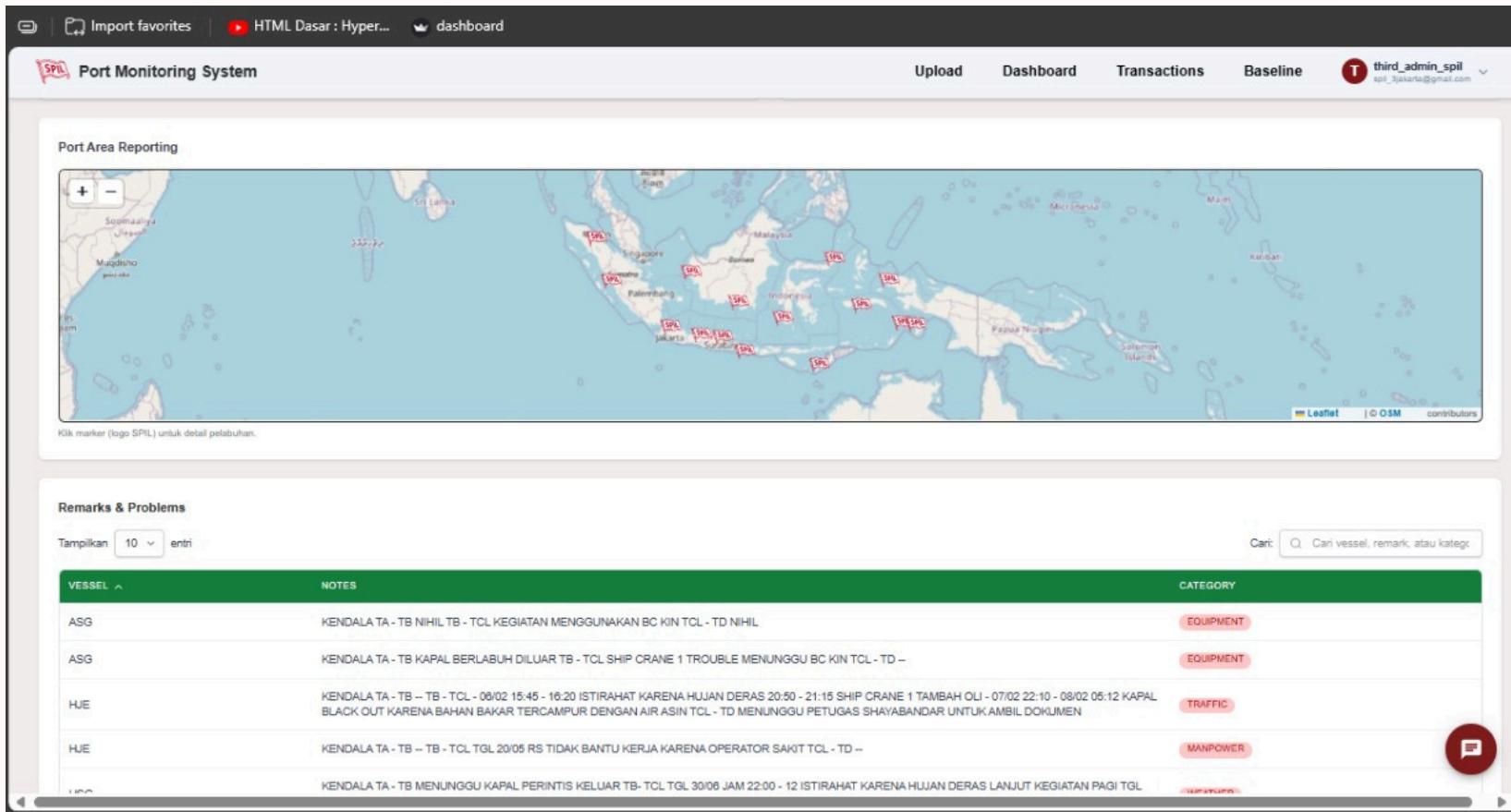
Impact :

- Streamlined Operations: **Leveraged LangChain orchestration** to automate complex data retrieval workflows, significantly reducing time spent on manual report analysis.
- **RAG-Powered Decision Support**: Empowered the Ship Operations Division with instant, high-accuracy insights by retrieving context-specific data via the RAG architecture.
- Knowledge Centralization: Consolidated dispersed vessel data into a unified, queryable vector database, creating a reliable single source of truth for the entire team.

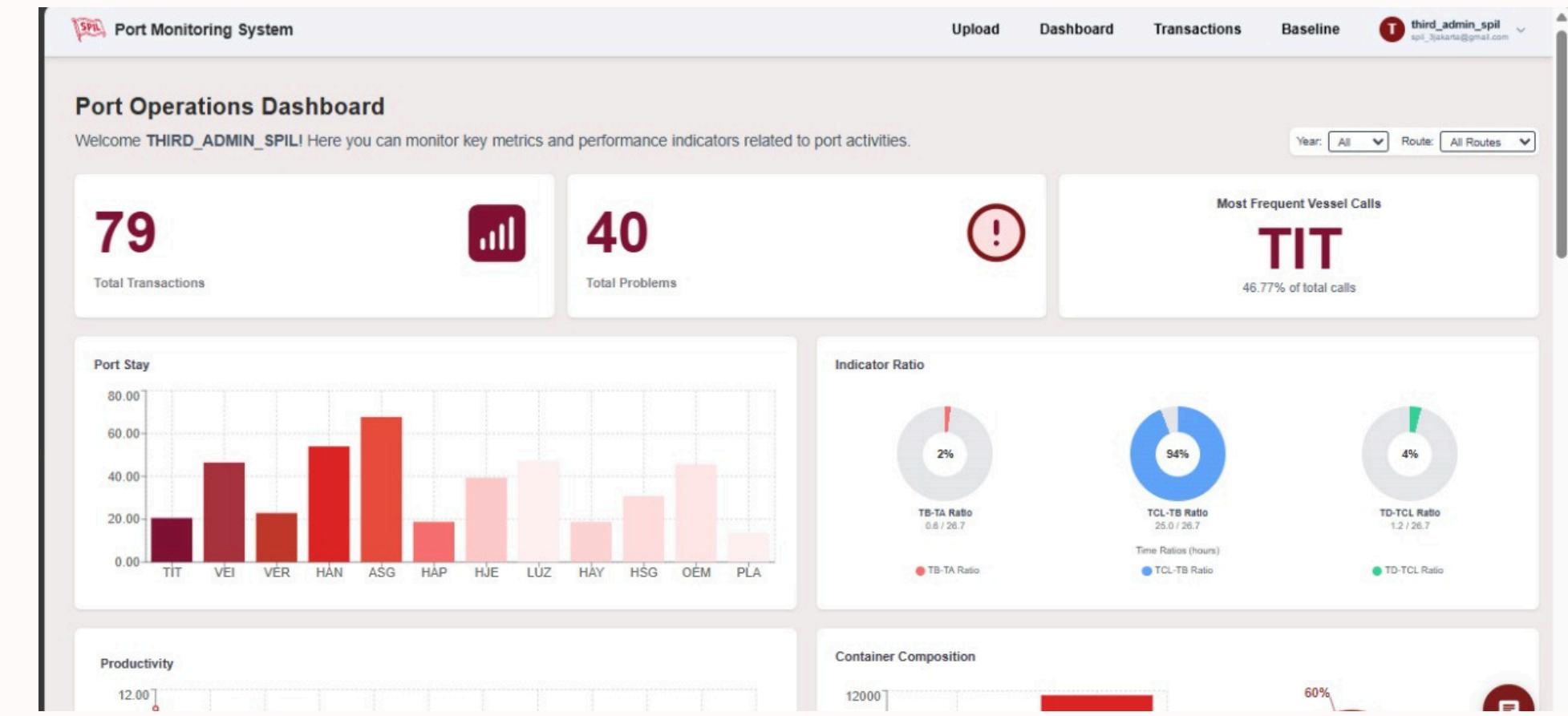
Tech Stack :



PORT TIME MONITORING



Tech Stack

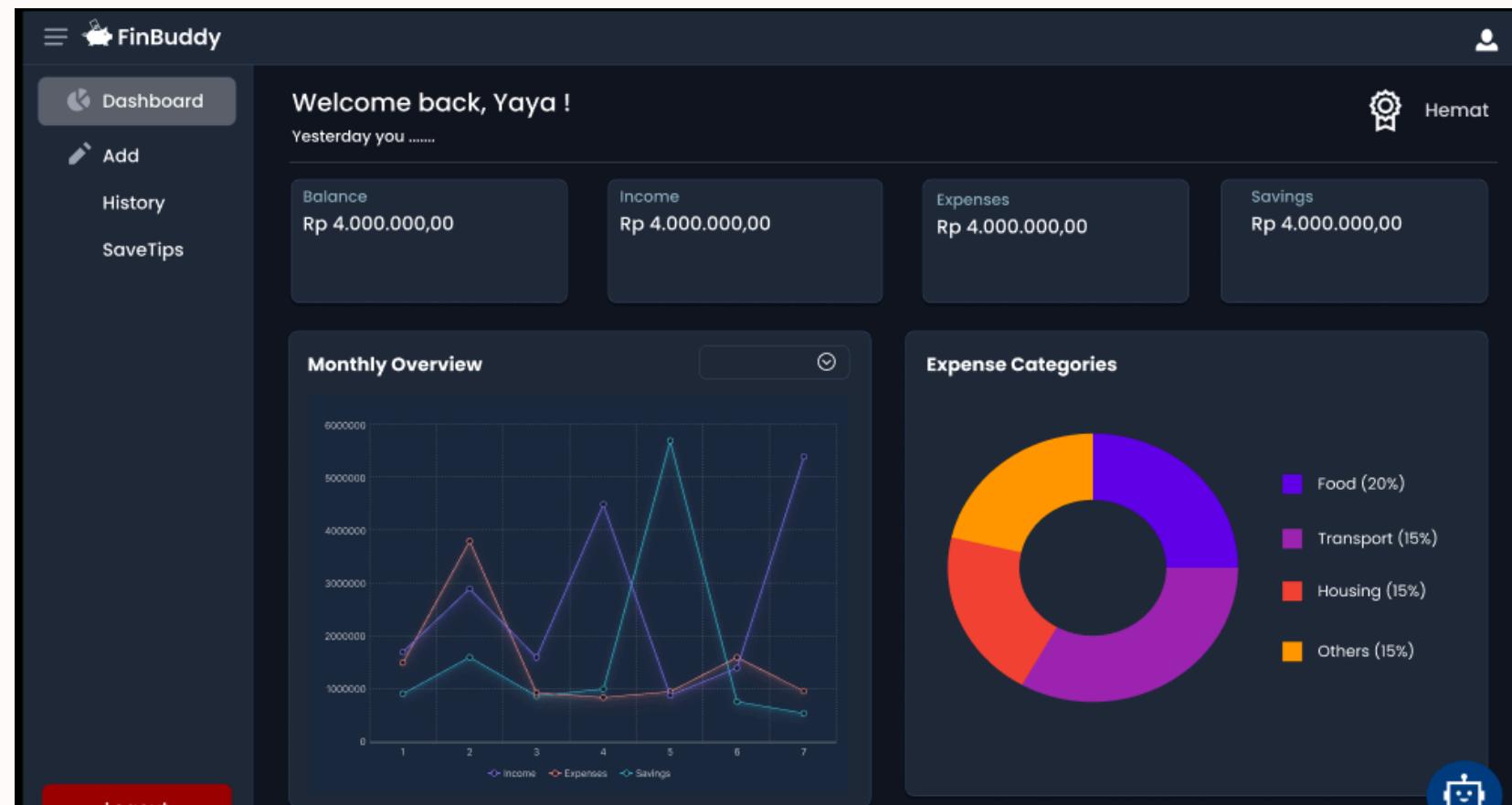


The Impact: Transformed raw operational data into actionable insights, enabling management to optimize port efficiency and speed up decision-making.

The Solution: Built a full-stack monitoring dashboard using **React Vite (Frontend)** and **Flask (Backend)** for high-performance data visualization.

The "Brain" (AI): Integrated a **Proprietary LLM** to automate vessel issue classification, replacing manual data interpretation.

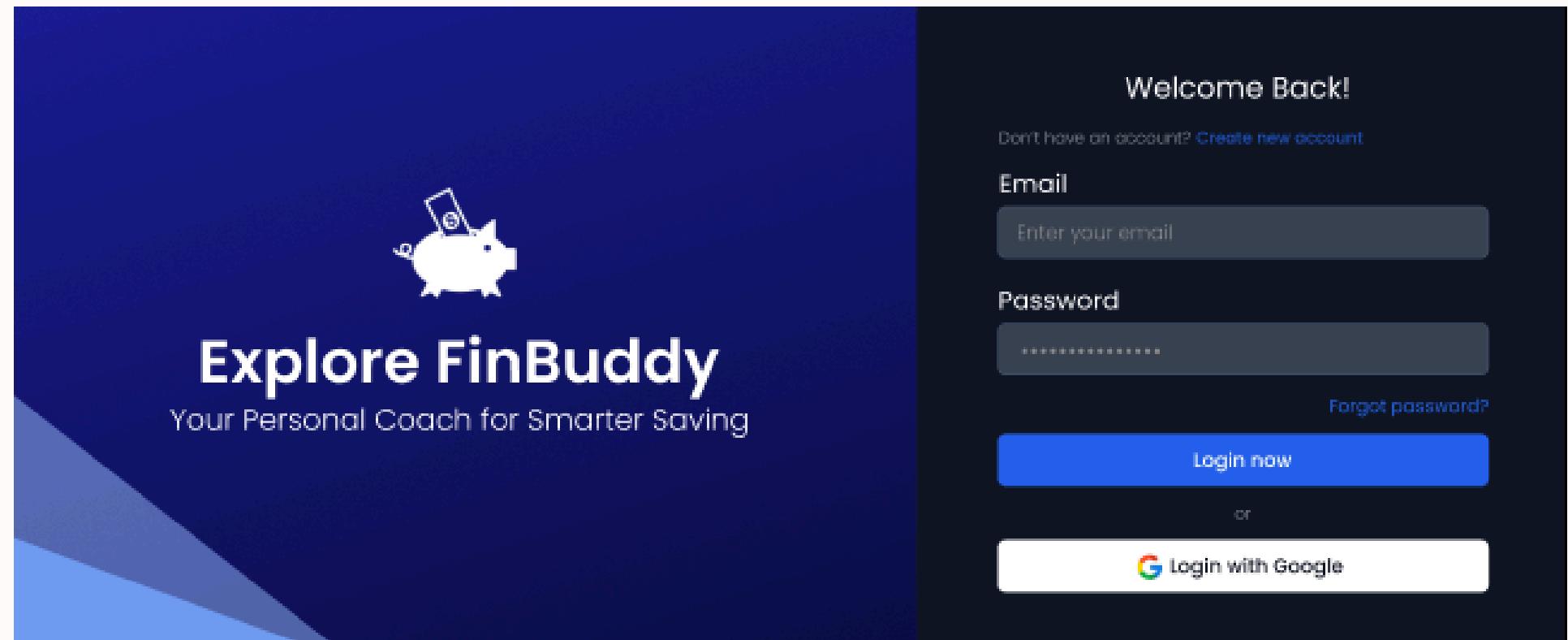
FINBUDDY: SMART FINANCIAL DASHBOARD & AI ASSISTANT [\(link\)](#)



Role : Chatbot Developer

Challenge

- Data Privacy Concerns: Financial data is highly sensitive; sending user queries to third-party APIs (like OpenAI) posed security and privacy risks.
- Cost Constraints: Reliance on external paid APIs would lead to unpredictable and high operational costs as the user base grows.
- Domain Specificity: Generic models often lack the specific context or tone required for personalized financial advice.



Solution

- Open-Source Architecture: Engineered a custom chatbot using Open-Source LLMs, ensuring full control over the infrastructure without external dependencies.
- Fine-Tuning Strategy: Fine-tuned the model on financial datasets to improve domain understanding and response relevance.
- RAG Implementation: Integrated Retrieval-Augmented Generation (RAG) to ground the AI's answers in the user's actual dashboard data, reducing hallucinations.

Impact

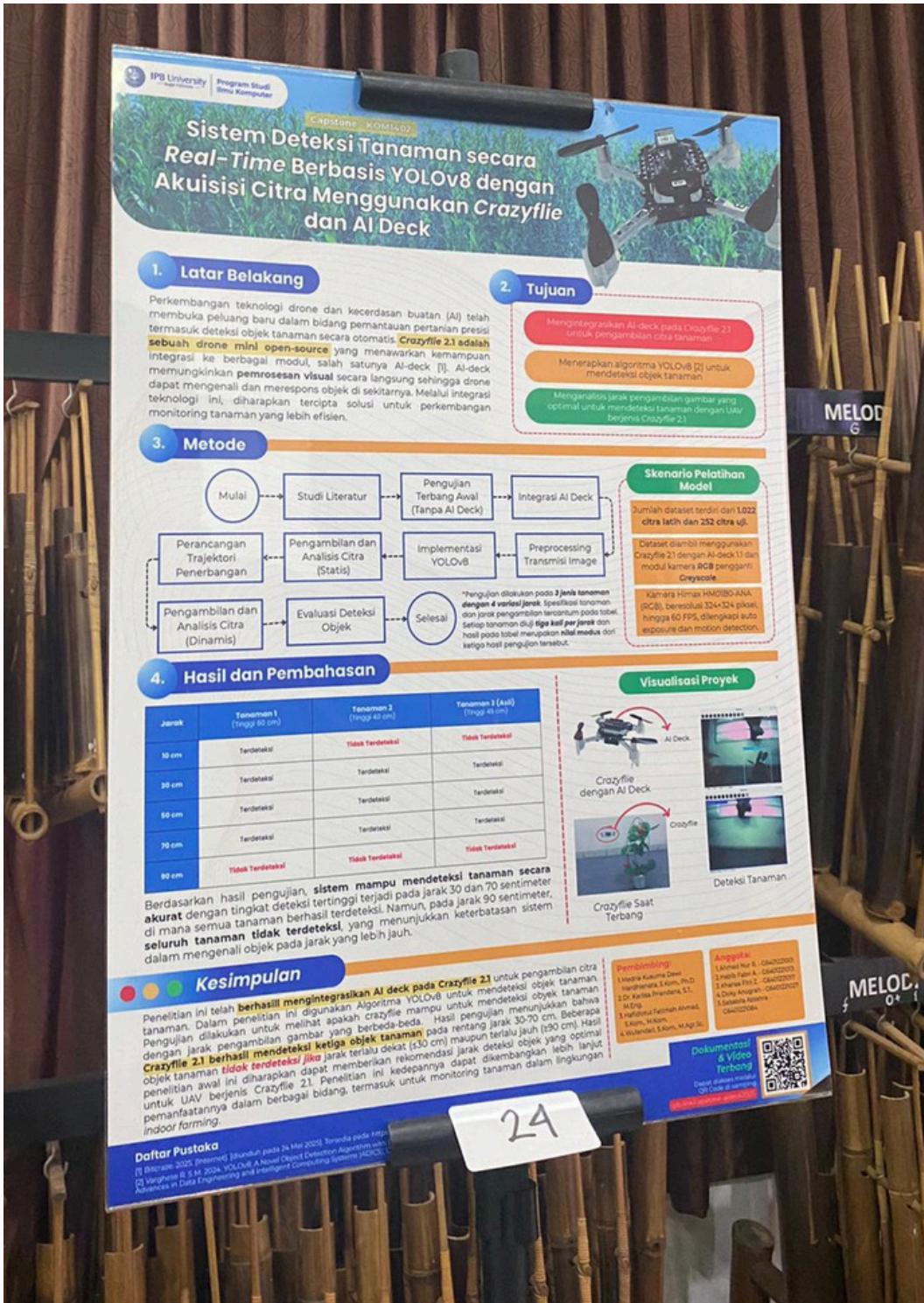
- Enhanced Data Security: Achieved 100% data sovereignty by processing all queries locally/internally, ensuring no financial data leaks to external providers.
- Cost Efficiency: Eliminated token-based pricing costs, creating a sustainable and scalable solution.
- Context-Aware Guidance: Provided users with instant, accurate explanations of their financial status directly within the dashboard.

Tech Stack :



CRAZYFLIE UAV - IMAGE DETECTION

([link](#))



Challenge :

- Extreme Hardware Constraints: Deploying a computer vision model on Crazyflie, a micro-drone with very limited processing power and battery life.
- Dynamic Instability: Capturing clear plant imagery for detection is difficult due to drone vibration and motion blur during flight.
- Data Scarcity: Lack of existing datasets for top-down aerial plant views required custom data collection.

Impact :

- Robust In-Flight Detection: Successfully achieved consistent object detection accuracy in both stationary hovering and active flight modes.
- Real-Time Edge Inference: Enabled immediate processing on the drone without needing heavy ground-station connectivity.
- Proof of Concept: Validated the feasibility of using micro-drones for autonomous agricultural surveillance.

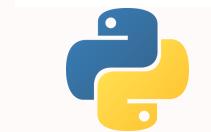
Solution :

- Lightweight Model Engineering: Collaborated in developing a **compact Machine Learning model** optimized for embedded execution on the drone's microcontroller.
- Custom Dataset Curation: **Executed the data collection process** to build a diverse training set covering various angles and lighting conditions.
- System Integration: Assisted in bridging the software-hardware gap by **integrating the trained model** directly into the Crazyflie's firmware/system.

Tech Stack :



TensorFlow Lite



Edge AI

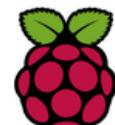
CONTAINER-SCANNER



Challenge

- Limited Connectivity: Port areas often have unstable internet, making cloud-based AI processing unreliable.
- Fragmented Visuals: A single photo cannot capture the entire surface of a large container, leading to missed defects.
- Subjective Inspection: Manual damage assessment is prone to human error and inconsistency.

Tech Stack



TensorFlow Lite



Solution

- Edge Computing Architecture: **Deployed Raspberry Pi** as a local edge server, enabling real-time processing without internet dependency.
- Advanced Image Processing: Implemented OpenCV image stitching algorithms to merge 3-4 sequential overlapping photos into a single, comprehensive panoramic view.
- AI Damage Analysis: **Integrated a lightweight object detection model** to analyze the panoramic image and quantify damage severity (e.g., dents, rust) instantly.
- Field-Ready Interface: **Designed a user-friendly UI** for field operators to control capture and view results on-site.

Impact

- Offline Capability: Ensures 100% operational uptime regardless of network conditions.
- Comprehensive Assessment: Panoramic stitching provides a holistic view of the container surface, eliminating blind spots.
- Automated Grading: transforms subjective visual checks into data-driven damage quantification.

**THANK YOU
SO MUCH!**