



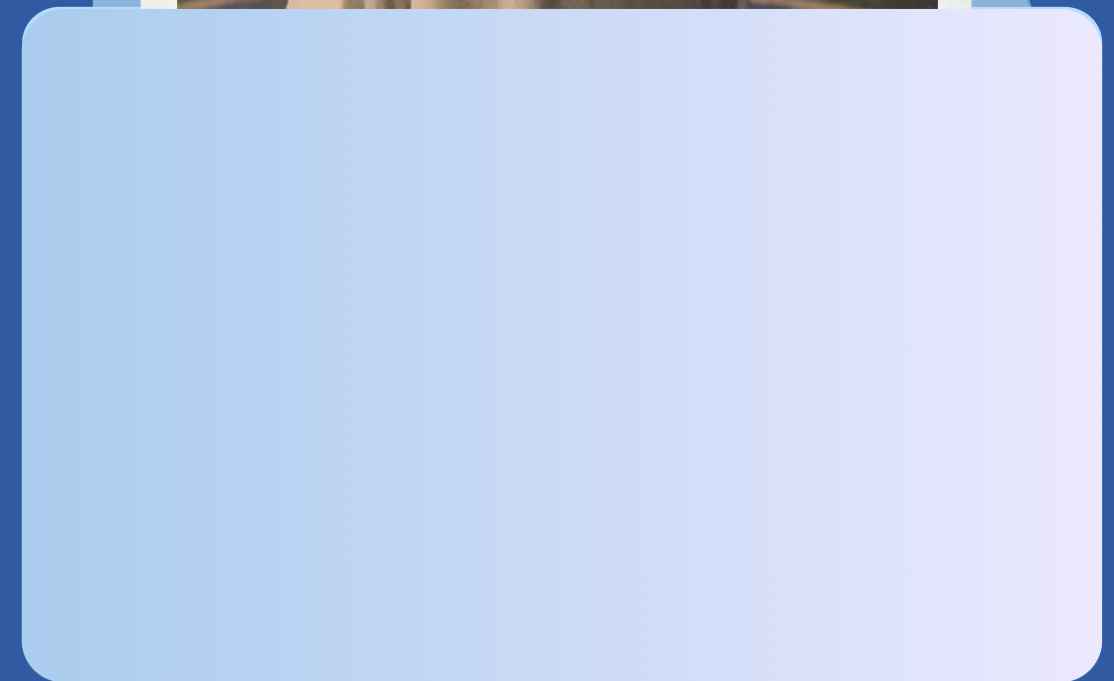
Data science ✦ Business Intelligence

Portfolio

Transforming data into insights

www.gilangsaputra.site

2024-2026





About me.

I am a third-year Information Systems undergraduate at Universitas Indonesia with a strong interest in Data Science, Business Intelligence, and Product Analytics. I enjoy transforming complex datasets into actionable insights through machine learning, data visualization, and analytical thinking.

Beyond analytics, I have experience building end-to-end digital products, from conducting user research and designing product features to developing full-stack applications. I believe the best solutions come from combining technical expertise with a deep understanding of business problems and user needs. Currently, I am seeking opportunities where I can contribute to data-driven decision making while continuously growing as a data professional.



Experience

PT LUCKY INDAH KERAMIK

Management Information System Intern

June 2025 – August 2025



About



Supported Finance and Manufacturing teams by developing BI dashboards, processing operational datasets, and improving reporting workflows through SQL, Python, and Power BI.

Contributed to improving reporting efficiency and supporting data-driven decision making across Finance and Manufacturing teams.

Responsibility



Developed interactive Power BI dashboards for Finance and Manufacturing reporting



Processed and validated operational datasets using SQL and Python.



Supported payment documentation and finance administration workflows.



Documented approval workflows and resolved data synchronization issues.

Tools



Business Intelligence



Database Query



Data Processing

Project ✦

Weather Indicator and Power Outage



Selamat Datang

Silakan masuk ke akun Anda untuk melanjutkan

Traveler

Mitra Bis

Email *

Ketik email di sini...

Password *

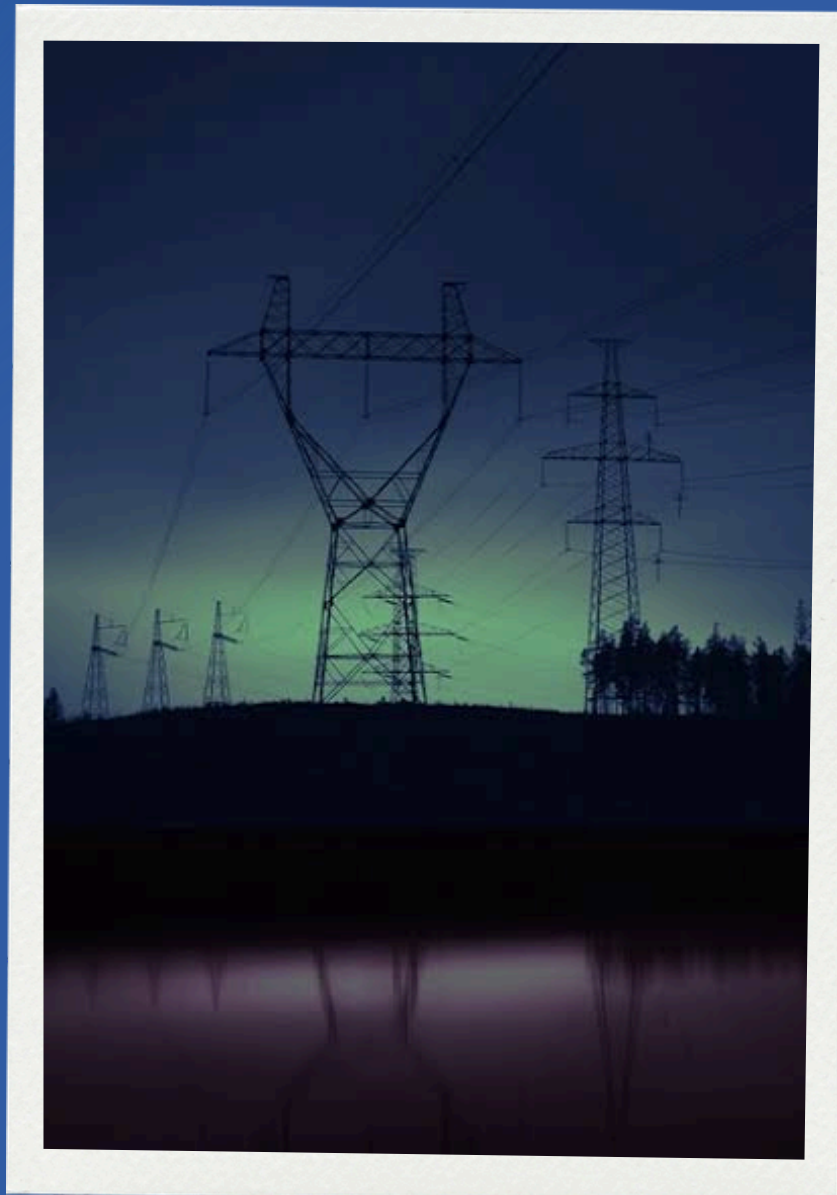
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Masuk



Weather Analytics & Power Outage Prediction

Machine Learning • Classification • Regression • Clustering



About

Developed an end-to-end machine learning solution to analyze weather conditions and predict electricity outage risks using over 14,000 hourly weather observations. The project combined predictive modeling, feature engineering, and unsupervised learning to support proactive infrastructure monitoring.

Challenge

✦ 45.8% missing temperature values

✦ Highly imbalanced outage events

✦ Zero-inflated rainfall distribution

Tech Stack



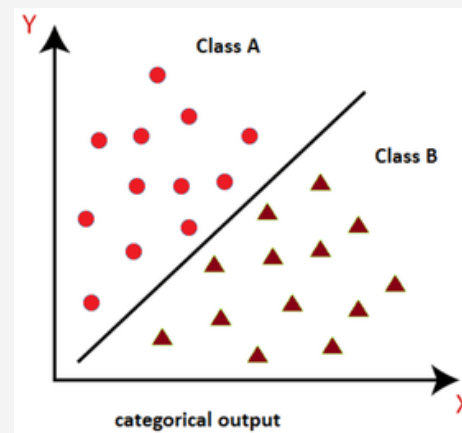


MACHINE LEARNING APPROACH

Classification

Objective

Predict electricity outage events from hourly weather observations.



Solution

Developed an XGBoost classification model with cost-sensitive learning and threshold optimization to address severe class imbalance.

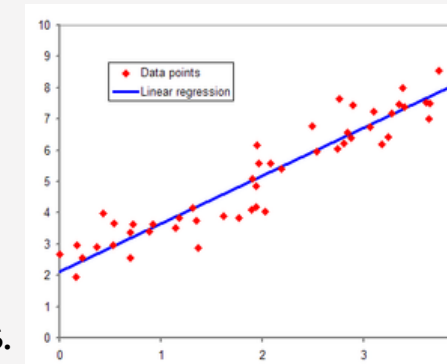
Key Contribution

- Optimized decision threshold for minority class detection
- Improved outage prediction on highly imbalanced data

Regression

Objective

Predict hourly precipitation volume from historical weather observations.



Solution

Designed a two-stage ensemble architecture combining a rainfall classifier with ensemble regression models to address zero-inflated precipitation data.

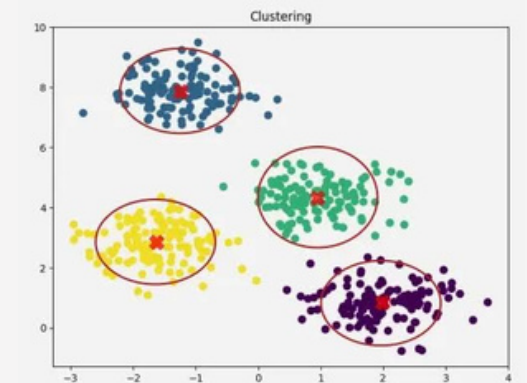
Key Contribution

- Built a two-stage prediction pipeline
- Optimized hyperparameters using Optuna Bayesian Optimization
- Reduced prediction bias on sparse rainfall events

Clustering

Objective

Identify natural weather patterns without relying on outage labels.



Solution

Applied PCA and K-Means clustering to distinguish normal and extreme weather conditions based on atmospheric features.

Key Contribution

- Discovered distinct weather clusters using unsupervised learning
- Achieved a Silhouette Score of 0.9217
- Identified extreme weather with a 1.8x higher outage risk



RESULTS

Classification

XGBoost

Successfully addressed severe class imbalance using cost-sensitive learning and threshold optimization.

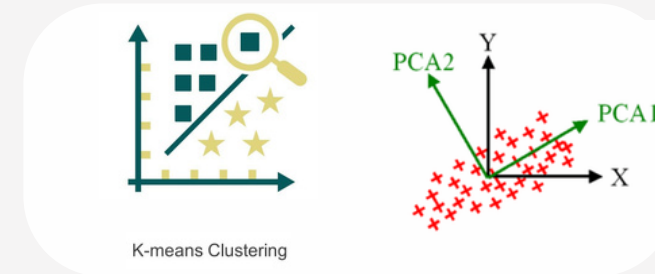
Regression

Two-Stage Ensemble

Improved rainfall prediction by combining classification, ensemble regression, and Bayesian hyperparameter optimization.

Clustering

K-Means + PCA



Silhouette Score
0.9217

Impact

Key Insight

Extreme weather clusters showed a 1.8x higher risk of electricity outages than normal weather conditions.

Resource

Notebook link

✦ [Classification](#)

✦ [Regression](#)

✦ [Clustering](#)

Presentation

✦ [Weather Indicator and Power Outage](#)



SpeedView

Formula 1 Analytics Platform



About

Developed a cross-platform Formula 1 analytics platform that transforms complex racing data into interactive insights across web and mobile applications. The platform enables users to analyze drivers, circuits, lap performance, weather conditions, and pit stop strategies through a unified analytics experience.

Key Contributions

- Developed Driver module
- Built Laps analytics module
- Implemented Pit Strategy module
- Developed backend APIs and Flutter integration

Tech Stack





KEY FEATURES

✦ Driver Analytics

Analyze driver profiles, nationalities, and race statistics.

✦ Lap Performance Analysis

Explore lap times, sector performance, and telemetry data.

✦ Pit Strategy Analytics

Compare pit stop timing, tire strategy, and race impact.

✦ Cross-Platform Experience

Integrated web and mobile applications powered by a shared Django backend.

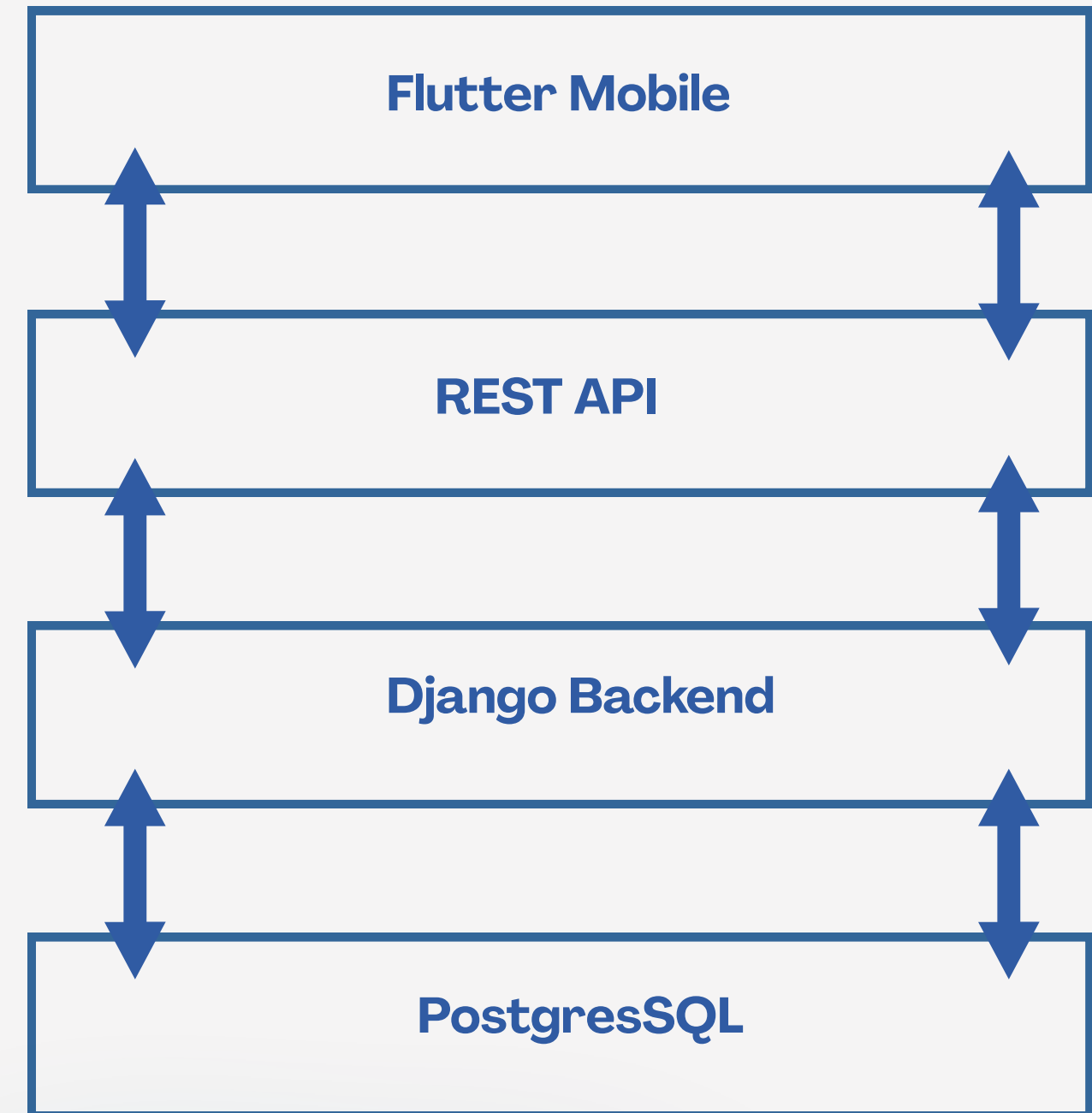
Resource

Github link:

✦ [Website](#)

✦ [Mobile](#)

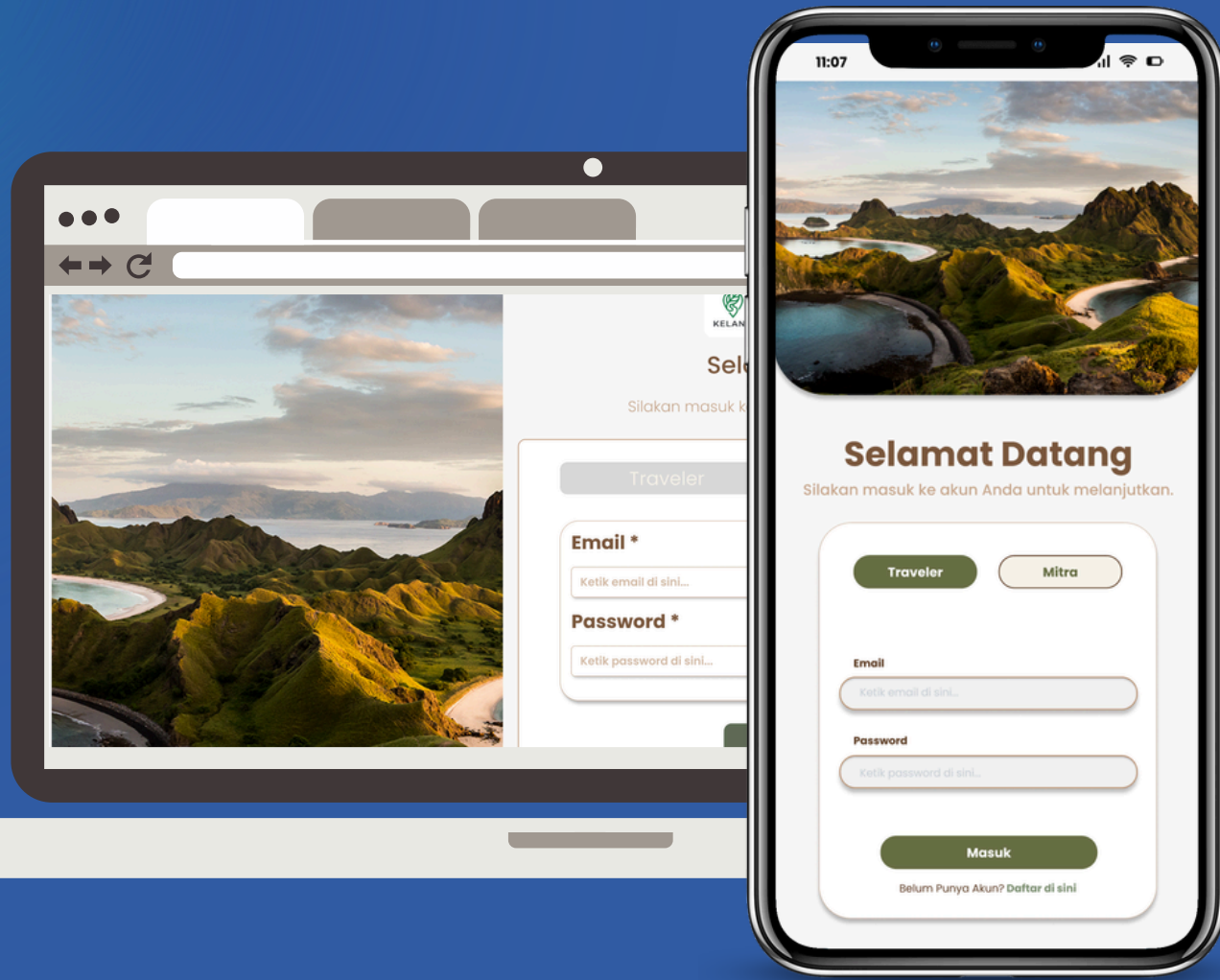
DATA ARCHITECTURE





Kelana

UX Research and Mobile App Design



About

Designed a mobile application prototype that helps travelers discover destinations, plan trips, communicate with local communities, and understand the social impact of their journeys.

Key Contributions

- Conducted UX research and user interviews
- Developed user personas and journey maps
- Designed user flows and information architecture
- Created high-fidelity prototypes in Figma

Tools



Google Docs





UX Process & Design Outcomes

Process



Research Conducted interviews and synthesized user needs into personas and journey maps.

Design Created information architecture, user flows, and interactive mobile interfaces.

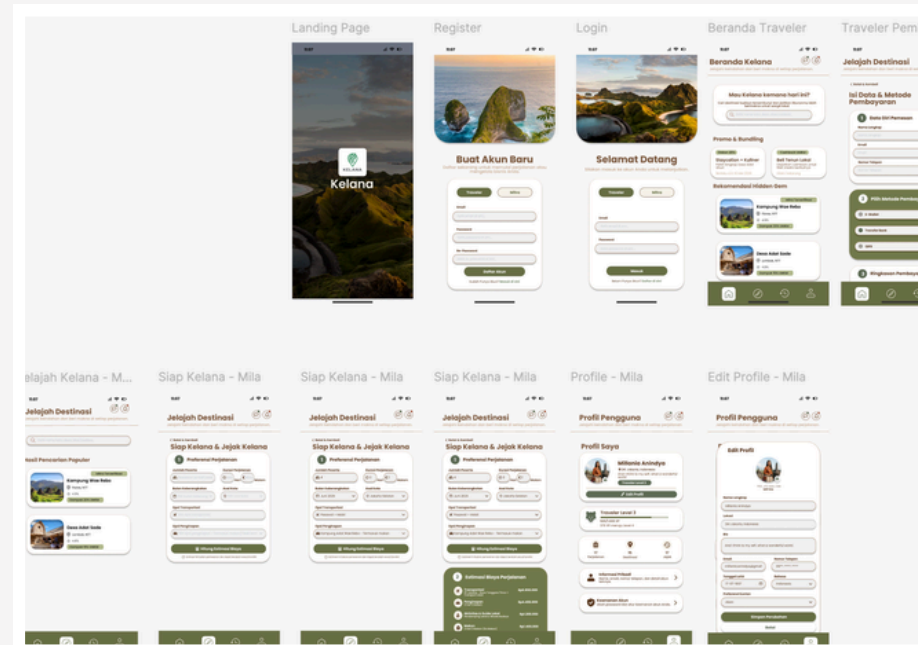


Outcome

- Two user personas
- User journey mapping
- High-fidelity prototype
- End-to-end mobile experience

Resource

- [Figma](#)
- [Document](#)
- [Deck](#)



Thank
you.

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