Kevin Synagogue Panjaitan

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Profile

Graduate with a Bachelor of Mathematics from Jambi University with a GPA of 3.79/4.00, specializing in Data Science, Machine Learning, and Quantitative Analysis. Proficient in complex statistical modeling, including time series forecasting (Hybrid ARIMA–ANN Thesis), as well as the development of predictive classification models. Skilled in using Python and R, supported by key libraries such as Pandas, NumPy, Scikit-learn, and TensorFlow. Possess practical experience in comprehensive data management, data cleaning, and visualization (thematic maps, time series charts) from the Internship Program at the Central Statistics Agency (BPS). Result-oriented and capable of translating data into relevant insights for decision-making.

Education

Sept 2021 – Nov 2025 **Bachelor of Mathematics, Jambi University**

- **GPA: 3.79/4.00**
- **Thesis Title:** Forecasting the Farmers' Exchange Rate of Jambi Province Using the Hybrid ARIMA–ANN Method
  - Utilized a Hybrid Model where the **ARIMA** (Autoregressive Integrated Moving Average) Model captures linear patterns such as trends and seasonality in the data, and the **Artificial Neural Network (ANN)** models the complex, non-linear residuals that cannot be handled by ARIMA.
  - This combination resulted in higher prediction accuracy compared to using ARIMA or ANN separately and significantly improved the forecasting accuracy of the data.
- **Relevant Coursework:** Mathematical Statistics, Real Analysis, Numerical Methods, Differential Equations, Mathematical Modeling, Data Science, Calculus, Linear Algebra, Time Series Analysis, Linear Regression

Experience

Internship Program at the Central Statistics Agency (BPS) of Jambi Province

- Participated in the processing and analysis of Jambi Province's socio-economic data using statistical software.
  - Responsible for the management of Jambi Province's social and economic data, which included comprehensive data cleaning and the presentation of descriptive statistics for indicators such as unemployment rate, macroeconomic data, and other data, ensuring data integrity and quality.
- Assisted the team in preparing publication reports and data visualization for BPS internal needs.
  - Developed and designed informative data visualizations (e.g., thematic maps, infographics, and time series charts) for internal presentation needs (coordination meetings) and publication reporting.

Head of Human Resources (Ketua Pemberdayaan Sumber Daya Manusia) - Mathematics Student Association (HIMATIKA)

- Led and coordinated 20 members to actively participate in planning strategies for strengthening the capacity of fellow association members.
  - Responsible for coordinating a series of student capability development events, consisting of webinars and workshops on specific topics, ranging from developing mathematical models to investment training and olympiad coaching.
- Initiated and led synergy between divisions to effectively execute their respective programs.
  - Established a *Cross-Functional Core Team* (CT) with the goal of serving as a daily communication bridge and cross-divisional problem solver within the Association to ensure maximal program execution.
- Increased member participation through collaborative activities and mentoring.

Independent Student Exchange Program (PMM) - Bandung Institute of Technology (ITB)

- Participated in academic activities and cross-university collaborative projects in the field of applied mathematics.
  - Applied the Lotka-Volterra dynamics model to analyze competitive interaction in the market, specifically between Company A and Company B, by using competitor stock movements as the main variables ('prey' and 'predator').

The results of this analysis provided crucial insights for resource strategy optimization and market share prediction.

- Adapted to a new academic environment and expanded professional network at the national level.
  - Initiated and managed a national-scale social activity program involving all campuses across Indonesia. This activity focused on increasing knowledge and professional networking among members through study visits and intensive sharing sessions.

Publications

Analysis of Jambi Province Unemployment in 2018 and 2019 using the Sign Test Method

- This research aims to test the difference in the number of unemployed people in Jambi Province between 2018 and 2019 using the Sign Test as a basis for policies to overcome unemployment.

10.22437/multiproximity.v1i2.21056

Forecasting the Exchange Rate of Farmers in North Sumatera Province Using the Hybrid ARIMA–ANN Method: Peramalan Nilai Tukar Petani Provinsi Sumatera Utara Menggunakan Metode Hybrid ARIMA–ANN

- Indonesia's agricultural sector has a significant contribution to the economy, so this research forecasts the Farmers' Exchange Rate for the Food sub-sector (NTPP) in North Sumatera Province using the Hybrid ARIMA-ANN model to produce accurate forecasts as a policy reference for improving farmer welfare.

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10.33319/agtek.v26i1.183

Prediction of Jambi Province Consumer Price Index Using Autoregressive Integrated Moving Average

- This research forecasts the Consumer Price Index (CPI) for the next 12 months as an effort to anticipate inflation using the ARIMA(4, 1, 4) model, which is the best model based on the AIC (57.397) and BIC (83.871) values.

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10.22437/multiproximity.v3i1.40361

Sertification

- **Introduction to Data Science with R** https://academy.dqlab.id/certificate
- **Data Science in Telco: Data Cleansing** https://academy.dqlab.id/certificate
- **Binary Classification** https://academy.dqlab.id/certificate
- **Implementing Decision Trees with CART** https://academy.dqlab.id/certificate
- **Fundamentals of Machine Learning** https://drive.google.com
- **Practical Real Business Application using Machine Learning** https://drive.google.com
- **Hackathon Machine Learning** https://drive.google.com
- **Machine Learning Hackathon** https://drive.google.com
- **Introduction to Big Data Analytics** https://drive.google.com

Projects

github.com/f1c221058 **Enhancing Bank Marketing Strategy Through Data Analysis and Machine Learning**

- Developed a machine learning-based predictive model to improve the effectiveness of the bank's marketing strategy.
- Conducted exploratory analysis, data cleaning, and implemented classification models (Logistic Regression, Random Forest, XGBoost).
- Tools Used: Python, Pandas, Scikit-learn, Matplotlib, Seaborn

Crypto Dashboard **Interactive Crypto Dashboard with Streamlit and Plotly**

- Developed a data-driven dashboard using Streamlit and Plotly to visualize cryptocurrency trends, featuring automated data cleaning, time-series filtering, and real-time KPI tracking for price volatility and trading volume.

Technical Skills

Programming Languages: Python, R, MATLAB, SQL, C++,Latex,Git

Areas of Expertise: *Deep Learning, Machine Learning, Data Scientist, Data Entry*