

TUAH JIHAN MANULLANG

B.Eng. in Telecommunication Engineering, Telkom University Purwokerto

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inni-dynamics.vercel.app

TECHNICAL SKILLS

PROGRAMMING LANGUAGES

- Python · Julia · MATLAB · JavaScript · HTML · CSS

Artificial Intelligence & Machine Learning

- Skilled in developing and deploying models using PyTorch, scikit-learn, CatBoost, and LightGBM.
- Experienced with data preprocessing, feature engineering, model evaluation, and hyperparameter optimization.
- Proficient in handling large datasets with pandas and Dask for scalable machine learning workflows

SCIENTIFIC MACHINE LEARNING

- Experienced with Julia's SciML ecosystem for projects involving numerical analysis, differential equations, and optimizations problems.
- Skilled in applying Neural ODEs, PINNs, and Koopman/SINDy methods for data-driven modeling

WEB DEVELOPMENT

- Frontend: NextJS, Typescript, Tailwind, ShadCN
- Backend: Django, MySQL
- Familiar with building interactive dashboards, RESTful APIs, and data-driven applications

EXPERIENCE

Data Scientist | PT. Olsera Indonesia Pratama

February 2023 - Present

- Developed interactive data dashboards using Next.js, Django, and MySQL for real-time business insights
- Performed data cleaning, visualization, and statistical analysis to support product and business decisions.
- Designed and deployed machine learning and AI models for predictive analytics and process automation

IoT Engineer | PT. LBN | Ciheras, West Java

August - October 2018

- Built an Arduino-based prototype integrating temperature and humidity sensors.
- Used MATLAB to test and analyze system robustness and performance under varying environmental conditions.

EDUCATION

Telkom University Purwokerto - 2019

BASc in Telecommunication Engineering

Korean Language Institute – 2016

Sun Moon University, Cheonan, South Korea

COMPETITION

Structural Break Challenge – ADIA Lab (2025)

- Global Rank: 7 / 8,000+ participants.
- Achieved an ROC AUC score of 88.23% in detecting structural breaks.
- Designed a hybrid CatBoost + feature-engineering pipeline using antropy, Numba, Numpy, SciPy, and signal-processing metrics for robust domain-agnostic detection.

PROJECT

Interactive Dynamical System Simulation

- Developed an interactive simulation environment to visualize and experiment with nonlinear dynamical systems
- Integrated real-time parameter tuning and trajectory analysis to explore stability and bifurcations/

Olsera Dashboard

- Designed and implemented a data visualization dashboard for business analytics using modern web technologies.
- Enabled real-time insights through interactive charts.

100 Days Machine Learning

- Completed a 100-day self-directed program covering supervised, unsupervised, and deep learning methods.

Classical Aerodynamics with Julia

- Developed computational tools to simulate airfoil lift, drag, and potential flow using Julia.
- Applied numerical methods to visualize streamline patterns and pressure distributions.

SINDy Web-App

- Developed an interactive web application to analyze and tune SINDy algorithm parameters for system identification.

DMD Web-App

- Built a web-based tool to compute and visualize eigenvalues and dynamic modes from time-series data.
- Demonstrated the relationship between data-driven modes and system stability through interactive plots.