Fernando Gunawan

Computer Science Student | Data Sciences

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SUMMARY

Computer Science student specializing in Intelligent Systems. Passionate about pursuing a career in machine learning and data science, focusing on building intelligent and scalable solutions.

CERTIFICATES

- Belajar Dasar Data Science **| Dicoding |** CERTIFICATE
- Code Generation and Optimization Using IBM Granite **| IBM |** CERTIFICATE
- Build a Data Warehouse with BigQuery Skill Badge **| Goggle Cloud |** CERTIFICATE
- Prepare Data for ML APIs on Google Cloud Skill Badge **| Goggle Cloud |** CERTIFICATE

SKILL

- **Language**: Python, SQL, Java, React, C
- **Frameworks**: Pandas, Numpy, Scikit-Learn, Matplotlib
- **Platforms**: Visual Studio Code, Goggle Collab, Visual Studio 2022, Eclipse, SSMS
- **Soft Skills:** Communication, Technical, Project Managment

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PROJECTS

Lithium Ion Battery SoH Detection | LINK **March 2025 - May 2025**

- Trained Random Forest, XGBoost, and SVR models to estimate the SoH of lithium ion batteries using NASA Battery Dataset.
- Implemented extensive data preprocessing, including CSV merging, feature engineering and down sampling for computational efficiency.
- Performed EDA and statistical evaluation using MAE, RMSE, and R^2 metrics.
- Optimized model performance through hyperparameter tuning and achieved $R^2 = 0.92$.

Air Quality Classification in Jakarta | LINK **April 2025 - May 2025**

- Performed data cleaning, feature engineering, and class balancing using SMOTE to handle imbalanced air quality categories.
- Conducted cross validation and hyperparameter tuning to optimize multiple models, achieving the best performance with 98.9% accuracy using LightGBM.
- Implemented EDA to identify pollutant patterns and seasonal trends affecting AQI levels.
- Prepared the trained model for deployment integration into a web based weather platform.

Animal Detection | LINK **Okt 2024 - Des 2024**

- Developed a custom YOLOv5 based deep learning model for automated detection and classification of animal species across images, videos, and live webcam streams.
- Train and fine tuned the model on a animal dataset, and optimizing detection accuracy across 10+ species.
- Use Python, PyTorch, YOLOv5, OpenCV, Flask, and HTML/CSS for end to end AI development.

EXPERIENCE

Software Laboratory Assistant **Aug 2025 - Present**
Lab Instructor

- Guided and supported over 100+ students in lab courses such as Object-Oriented Programming (Java), Web Development, and Data Warehouse (SQL), making complex concepts easier to understand.
- Collaborated in a 2 person team to deliver lab sessions, answer questions, and help students apply theory in practice.
- Created case studies and exercises that were later used as part of lab exams and class assessments.
- Reviewed and graded student projects, assignments, and quizzes, providing fair evaluation and constructive feedback.
- Joined regular training sessions to continuously improve both technical and teaching skills.

Computer Science Academic Mentoring **Sep 2025 - Present**
Peer Mentor

- Worked with students in one on one mentoring sessions, especially those repeating courses or struggling with low grades.
- Helped them review key concepts and break down difficult topics in learning.
- Created simple practice exercises to match each student's needs, making study sessions more effective.
- Received a scholarship covering 16 academic credits as recognition for mentoring contributions.

EDUCATION

BINUS University **Sep 2023 - Present**

Computer Science

- GPA: 3.98 / 4.00.
- Currently Specializing in Intelligent Systems Streaming.
- Co-authored a research paper accepted at the GECOST International Conference 2025, presenting work on Comparative Analysis of Machine Learning Models for Estimating Li-ion Batteries State of Health.
- Relevant course: Machine Learning, Deep Learning, Computer Vision, NLP, Basic Statistic, Linear Algebra, AI.

ORGANIZATION EXPERIENCES

UREEKA Web Development **Feb 2025 - Present**

Member

- Worked with a team to build web applications, often combining them with AI features Machine Learning model to create solutions based on problem.
- Took part in brainstorming and coding, learning how to turn ideas into real working websites.
- Collaborated closely with other members, improving teamwork and problem solving skills.