Jidan Humaidi

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Research Interest

Embedded Systems, Wireless Sensor Networks, IoT, Appllied ML, Mobile Computing, Edge Computing.

Education

Diponegoro University (#4 *University in Indonesia*)[1] Sept. 2021 – June 2025

Bachelor in Automation Engineering

- **Major GPA:** 3.89/4.00 · Ranked 1st Graduate in Batch
- **Related Coursework:** Internet of Things (A), Embedded Control Systems (A), Interfaces and Peripherals (A), Embedded Control Systems Lab (A).

Research Experience

Research Trainee Jan. 2025 – Present

System and AI Research Training Program (SYAIR), University of Chicago *Remote, Chicago*

- **Part of UChicago-Indonesia online research training program (50 best student researchers from the entire nation selected)**
- Instructed (remotely) by Prof. Haryadi Gunawi.
- Read technical papers from MobiCom, SenSys, and MobiSys (20+ hours/week).
- Currently reproducing experiments from papers in IoT and embedded systems.

Kedaireka.id Aug. 2023 – Des. 2023

Electrical Engineer *Surabaya, Indonesia*

- Contributed to research on AI-powered monitoring and forecasting systems for renewable energy production, integrating LoRa-based weather stations and developing ~1000 lines of code.
- Dedicated 20 hours per week to research, focusing on the deployment of intelligent, data-driven solutions for sustainable energy technologies.
- The research was funded by PLN (Perusahaan Listrik Negara), Indonesia's largest electricity company, with a grant of approximately $20,000 USD and has been adopted to support renewable energy management initiatives.

Project

LoRa-Based Weather Station Integrated with XGBoost Forecasting Feb. 2025 – Present

- Addressing Indonesia's diverse topography and limited 4G coverage; provided a practical solution for real-time weather monitoring in remote areas.
- Conducted the research with a $2,000 USD grant and deployed a reliable low-power system equipped with environmental sensors and machine learning to support local meteorological needs.

Visignify Aug. 2023 – Jan. 2024

- An assistive application for people with disabilities featuring sign language detection, object recognition, voice control, and an interactive sign language learning module.
- Contributed to the machine learning workflow by building and optimizing models deployed in TFLite format, dedicating 10 hours per week and pitching the project to investors with the opportunity to secure funding of approximately $9,000 USD.

Extracurricular Activities

Bangkit Academy led by Google, Tokopedia, Gojek, and Traveloka Aug. 2023 – Jan. 2024

Machine Learning Cohort *Remote, Indonesia*

- Selected from a competitive pool of 67,000 applicants, only 5,000 students were chosen to participate.
- Completed 900 hours of coursework in Machine Learning, Python, Data Analysis, and TensorFlow.
- Graduated with distinction, ranking in the top 10% of the cohort.

URDC (Universitas Diponegoro Robotic Development Center) Aug. 2021 – Des. 2023

Electrical Engineer *Semarang, Indonesia*

- Achieved 3rd place regionally and received the Best Design Award at the 2023 the ABU Robocon Indonesia (KRAI) division, organized by Ministry of Education, Culture, Research, and Technology of the Republic of Indonesia.
- Gained hands-on experience with STM32 microcontrollers, building and programming autonomous robotic systems for high-level competitions.
- Applied theoretical knowledge and practical skills in robotics and embedded systems to drive innovation, contributing to the team's success.

Experience

Yokogawa Sept. 2024 – Des. 24

Product and System Engineer *Jakarta, Indonesia*

- Assisted in SCADA system integration for government and private sector water treatment plants, including I/O assignment, cabinet wiring, HMI development, and ladder diagram design.
- Conducted system configuration and testing (loop checks, FAT punchlists, and delivery documentation) to ensure reliable PLC and SCADA operation in industrial automation projects.

Laboratory Assistant Feb. 2023 – Jul. 23

Assistant *Diponegoro University*

- Led and assisted practical sessions for over 50 students, providing guidance in embedded systems, control systems design, and programming with STM32, Arduino, and Raspberry Pi.
- Applied interdisciplinary skills in Python, MATLAB, PID control, GUI development, pneumatics, and Autodesk Fusion 360, while supporting hands-on learning in electrical and network engineering.

Certificate

TensorFlow: Data and Deployment Nov. 2023 – Present

DeepLearning.AI-Coursera

- Completed TensorFlow: Data and Deployment Specialization by DeepLearning.AI on Coursera (40 hours), learning to serve, export, and deploy TensorFlow models to web, mobile, and edge devices.

TensorFlow Developer Oct. 2023 – Present

DeepLearning.AI-Coursera

- Completed DeepLearning.AI TensorFlow Developer Professional Certificate on Coursera (80 hours), focusing on building and training neural networks for computer vision, natural language processing, and time series using TensorFlow.

Mathematics for Machine Learning and Data Science Sep. 2023 – Present

DeepLearning.AI-Coursera

- Completed Mathematics for Machine Learning and Data Science by DeepLearning.AI on Coursera (60 hours), covering linear algebra, calculus, probability, and optimization foundations essential for machine learning.

Machine Learning Oct. 2023 – Present

Stanford University-Coursera

- Completed Stanford University's Machine Learning course on Coursera (80 hours), covering supervised and unsupervised learning, supervised learning, and reinforcement learning.

Google Data Analytics Specialization Nov. 2023 – Present

Coursera

- Completed the Google Data Analytics Professional Certificate (240 hours), covering data cleaning, analysis, visualization, and the use of tools like spreadsheets, SQL, R, and Tableau..

Technical Skills

Languages: Python, C/C++, MATLAB, SQL, HTML/CSS, Bash.

Libraries: TensorFlow, TensorFlow Lite, NumPy, Pandas, OpenCV, Firebase, LoRa libraries, scikit-learn.

Systems Used: STM32, Arduino, Raspberry Pi, Android devices, LoRa-based weather stations, edge AI systems.

Software: Python, MATLAB, Autodesk Fusion 360, STM32CubeIDE, Arduino IDE, VS Code, Jupyter Notebook, Git, Eagle, SolidWorks.

References

Prof. Haryadi Gunawi — Mentor
Professor at the Department of Computer Science, University of Chicago — *haryadi@cs.uchicago.edu*

Priyo Sasmoko, ST, M. Eng. — Academic Advisor
Head of the Automation Engineering study program, Universitas Diponegoro — *psasmoko@lecturer.undip.ac.id*

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