

# Mochammad Ariel Sulton

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## ABOUT

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A 5th semester Applied Data Science undergraduate student specializing in Artificial Intelligence, Data Science, Large Language Models (LLMs), Computer Vision, Autonomous Vehicles, and Full-Stack Web Development. Experienced in building end-to-end systems: data acquisition & processing, machine/deep learning modeling, ROS2 & IoT integration, web application development, and system observability & reliability. Passionate about AI-driven innovation with a rigorous, structured approach; proficient in EDA & inferential analysis, informative visualization, feature engineering, and model evaluation for data-driven decision-making. National-level competition winner and Google Student Ambassador 2025. Collaborative, impact-oriented, and quick to adapt to new technologies.

## EDUCATION

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### Politeknik Elektronika Negeri Surabaya

*Bachelor of Applied Science, Applied Data Science*

**July 2023 - Present**

*Surabaya, Indonesia*

- Current GPA: 3.77 / 4.00.
- Fully funded by the Indonesia Government's KIP-K Scholarship (Kartu Indonesia Pintar Kuliah).

### MAN Sidoarjo

*Mathematics & Natural Sciences*

**July 2020 – May 2023**

*Sidoarjo, Indonesia*

## EXPERIENCE

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### Google Indonesia

*Google Student Ambassador*

**September 2025 – Present**

*Indonesia*

- Created 10 educational content pieces to improve AI literacy among university students.
- Delivered hands-on sessions on Gemini AI and its five key features.
- Produced content and supported the Google Student Ambassador Inauguration Event.

### Politeknik Elektronika Negeri Surabaya

*Environmental AI Researcher*

**August 2025 – Present**

*Surabaya, Indonesia*

- Conduct monthly collection of water-quality measurements and multispectral drone imagery.
- Research and build an AI pipeline for mangrove health assessment from the collected data.
- Apply computer vision, time-series forecasting, and LLM-based summarization (RAG).

### Asah led by Dicoding

*Machine Learning Cohort*

**January 2025 – Present**

*Indonesia*

- Completed independent study modules focused on machine learning and deep learning.
- Strengthened soft skills via sessions on Personal Productivity, Growth Mindset, Flexing Under Pressure, Communication and Networking, Business Presentation, and Personal Branding.
- Implemented a product recommendation system using popularity-based and collaborative filtering approaches.

### EEPIS Data Enthusiast (EDUST)

*Mentor and Social Media Specialist*

**January 2025 – Present**

*Surabaya, Indonesia*

- Expanded community event reach and participation by 20% year-over-year.
- Mentored the data science division for competitions held by the community.
- Recorded and edited weekly community meeting videos.

### Penship EEPIS RoboBoat Team

*Head of Programming Division and Autonomous Systems Engineer*

**January 2024 – Present**

*Surabaya, Indonesia*

- Led the team's software roadmap, code-style standardization, and technical documentation.
- Built a ROS2 stack for autonomous boat navigation with two control-method approaches.
- Implemented obstacle avoidance via sensor fusion across camera (computer vision), GPS, and LiDAR.
- Developed YOLOv11-based object detection and optimized inference & data pipelines.
- Evaluated model performance and mitigated false positives (color similarity, thresholding, augmentation).

## PROJECTS [[Portfolio Link](#)]

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### **Tunarasa: Inclusive Communication Platform for Public-Service Accessibility – COMPFEST 17 | [Github](#)**

- Developed a web application to assist people who are deaf or non-verbal in public-service settings.
- Integrated Next.js, FastAPI, and Supabase for the web stack; LangChain with LLaMA for LLM + RAG; TensorFlow.js for gesture-recognition computer vision; and Grafana for observability.
- Deployed to production on Google Cloud Platform using Docker Compose.

### **Webnify: Website Builder Platform using Web Templating – SaaS | [Github](#)**

- Built a software-as-a-service (SaaS) website builder targeting MSMEs.
- Integrated Next.js, PostgreSQL, Drizzle ORM, and Docker Compose as the full tech stack.

### **Ngumpulin: AI-Powered Plagiarism Detection Platform – Semester 4 Capstone | [Github](#)**

- Developed a web application for plagiarism detection to support instructors in assessment.
- Integrated FastAPI as the backend, Grafana for observability, and MLflow + Apache Airflow for structured ETL & MLOps.

### **Sentiment Analysis on Twitter (Bahasa Indonesia) using Deep Learning – Dicoding Project 2025 | [Github](#)**

- Built LSTM and IndoBERT models to classify positive, negative, and neutral sentiments from Indonesian tweets.
- Performed data preprocessing (tokenization, stopword removal, padding) and dataset exploration to improve accuracy.
- Visualized predictions and evaluated performance with accuracy, precision, and F1-score.

### **Convolutional Neural Network for Flower Classification – Dicoding Project 2025 | [Github](#)**

- Implemented a CNN to classify flower images into five classes using TensorFlow and Keras.
- Applied data augmentation, image normalization, and hyperparameter tuning to boost performance.
- Evaluated results with a confusion matrix and validation accuracy; demonstrated visual prediction outputs.

### **Fraud Detection using Clustering and Classification – Dicoding Project 2025 | [Github](#)**

- Built a fraud-detection system combining unsupervised (clustering) and supervised (classification) algorithms.
- Performed feature analysis, handled imbalanced data, and applied feature scaling to improve prediction quality.
- Evaluated models using AUC-ROC and confusion matrix to assess anomaly-detection effectiveness.

### **Lawana: Autonomous Surface Vessel (ASV) – Kontes Kapal Indonesia (KKI) 2024**

- Developed ASV motion algorithms to complete competition missions at KKI 2024.
- Integrated sensor fusion for obstacle avoidance: YOLOv8-based computer vision, GPS, and LiDAR.
- Built a Flask-based web stack for real-time ASV monitoring.

### **Jalavahana: Unmanned Autonomous Surface Vehicle for Offshore Survey – PKM-KC 2024 | [Github](#)**

- Developed UASV software for offshore data collection supporting wind-turbine site planning.
- Used YOLOv4-based computer vision to capture underwater flora & fauna imagery.
- Implemented a Flask-based web control system for browser-driven UASV control.

## ACHIEVEMENTS

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1. **Champion (1st Place)** – AI Innovation Challenge, COMPFEST 17 (Universitas Indonesia) | September 2025
2. **Student Award** – AI Innovation Challenge, COMPFEST 17 | September 2025
3. **Semifinalist** – IoT Development Competition, Technocorner UGM 2025 | June 2025
4. **Finalist** – Autonomous Surface Vessel Prototype Contest, Kontes Kapal Indonesia (Pusprenas) | October 2024
5. **Awardee** – PKM-KC Funding (Ministry of Education, Culture, Research, Technology Indonesia) | April 2024

## ORGANIZATIONS & VOLUNTEERING

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### **Community Service at Ecotourism Mangrove Wonorejo**

**August 2025**

*Community Service and Environmental Research Volunteer*

*Surabaya, Indonesia*

- Led environmental clean-up activities and conducted waste audits to inform sustainability research.
- Collected environmental datasets (water quality and multispectral drone imagery) from mangrove areas.
- Ensured standard operating procedures were followed throughout the community-service program.

## **PENS LKMM-TD 2025**

*Liaison Officer*

**April 2025**

*Surabaya, Indonesia*

- Served as the primary point of contact for 27 participants, coordinating pre-event, during-event, and post-event logistics.
- Ensured participant readiness by managing logistics, schedules, and accommodations.
- Maintained information channels and feedback forms to improve future events.

## **PENS Informatics & Applied Data Science Student Association Succession 2024**

*Public Relations*

**July 2024**

*Surabaya, Indonesia*

- Managed internal committee communications via WhatsApp: drafted announcements, scheduled broadcasts, and sent reminders (D-3, D-1).
- Coordinated across divisions to confirm availability and align schedules.
- Maintained attendance lists and tracked timing changes to keep all committees updated.

## **Campus Expo MAN Sidoarjo 2024**

*Campus Ambassador*

**January 2024**

*Sidoarjo, Indonesia*

- Introduced degree programs, scholarships, and campus culture via presentations and Q&A to hundreds of students.
- Provided admissions guidance and distributed presentation materials.
- Shared personal student experiences to motivate prospective students to pursue higher education.

## **CERTIFICATIONS**

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- [Google for Education: Gemini Certified Educator](#)
- [Google for Education: Gemini Certified University Student](#)
- [Dicoding: Belajar Fundamental Deep Learning](#)
- [Dicoding: Belajar Machine Learning untuk Pemula](#)
- [Dicoding: Belajar Pengembangan Web Intermediate](#)
- [Dicoding: Belajar Dasar Cloud dan Gen AI di AWS](#)
- [Dicoding: Belajar Fundamental Front-End Web Development](#)

## **SKILLS**

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Hard Skills:

- Data & ML/DL: Python, NumPy, Pandas, scikit-learn, TensorFlow/Keras, PyTorch, MLOps, MLFlow.
- Computer Vision: OpenCV, YOLOv8/YOLOv11, data augmentation, on-device inference.
- LLM & RAG: LangChain, Groq API, prompt engineering, Pinecone, document Q&A dan summarization.
- Robotics/Edge: ROS2 (rclcpp/rclpy), MAVROS, LiDAR (RPLIDAR), GPS/IMU.
- Backend & Data Pipeline: FastAPI, REST, WebSocket, ETL, Apache Airflow, Spark/Hadoop, Supabase (Auth/DB), PostgreSQL.
- Frontend & DevOps: Next.js, Tailwind, Docker/Compose, Linux, Git, Grafana/Prometheus (monitoring), Dokploy/Vercel deployment.

Soft Skills: Communication, Problem Solving, Critical Thinking, Project Management, Time Management, Resilience, Flexibility, Leadership, Team Management.

Languages: Indonesian and English.