

ALRIDHO

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EDUCATION

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| Hasanuddin University <i>Physics, Electronics and Instrumentation. GPA: 3.89</i> | Makassar, Indonesia Aug 2021 – Oct 2025 |
| <ul style="list-style-type: none">Participant in the 4th International Medical Device and Technology Conference (iMEDiTec 2025) in Penang, Malaysia.Committee Member and Participant in the National Physics Seminar (SNF) 2024 Makassar.Teaching Assistant for Machine Learning and Introduction to Linux courses. | |

EXPERIENCE

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| Laboratory Assistant - Instrumentation Lab <i>Hasanuddin University</i> | July 2024 – June 2025 Makassar, Indonesia |
| <ul style="list-style-type: none">Instructed the Microcontroller Systems practicum, teaching sensor integration on Arduino/ESP32 using I^2C and <i>SPI</i> protocols.Guided the IoT Instrumentation practicum, focusing on device connectivity via HTTP REST API, WebSocket, and Blynk for data monitoring. | |
| Independent Study - Machine Learning <i>Bangkit Academy led by Google, GoTo, Tokopedia, and Traveloka</i> | Feb 2024 – June 2024 Makassar, Indonesia |
| <ul style="list-style-type: none">Mastered machine learning and deep learning concepts, ranging from mathematical foundations to algorithm development with TensorFlow and cloud deployment.Collaborated with a team to develop an Android application integrated with machine learning models.Graduated with best graduate distinction. | |

RESEARCH EXPERIENCE & PUBLICATIONS

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| Research Assistant - Machine Learning <i>Collaborative Fundamental Research (PFK) Unhas 2024</i> | |
| <ul style="list-style-type: none">Contributed to the development of an IoMT framework for Real-Time Patient Consciousness Monitoring by processing muscle signal (EMG) and heart rate (ECG) data.Built an Unsupervised Learning pipeline for physiological time-series data using TS2Vec for feature embedding and DBSCAN for data clustering.Co-authored an international scientific publication in the Signals journal (MDPI): doi.org/10.3390/signals6040067. | |
| Research Assistant - Machine Learning <i>PPS-PTM BIMA DIKTI Grant</i> | |
| <ul style="list-style-type: none">Designed an IoT and Machine Learning-based health monitoring system for hypertension patients to enable early detection of stroke risk.Developed Random Forest, Logistic Regression, and XGBoost models using SMOTE techniques to optimize imbalanced data on a custom dataset, achieving $\approx 90\%$ accuracy on test data. Manuscript is currently under review. | |
| Research Assistant - Internet of Things <i>Community Service Program (PPMU) Unhas 2025</i> | |
| <ul style="list-style-type: none">Designed and implemented a Smart Irrigation and hydroponic automation system based on ESP32, integrated with the Blynk platform for remote monitoring.Deployed the device at the partner location and provided a system demonstration to the To Nopo Farmer Group in Barru Regency. | |

PROJECTS

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| Robotic Arm Defect Sorter Based on VAE & YOLO | |
| <ul style="list-style-type: none">Developed a Convolutional Variational Autoencoder (C-VAE) model for anomaly detection, trained exclusively on normal datasets to recognize defects using MSE between input and reconstructed images.Integrated the YOLO algorithm as a pre-processing step to detect objects and crop bounding boxes before inputting them into the VAE model.Connected both models with a robotic arm system for automatic sorting. The integrated robot and deep learning system achieved 100% accuracy on 20 mixed test containers (normal and defective). | |

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| Sentiment Analysis - IndoBERT Fine Tune | |
| <ul style="list-style-type: none">Built a custom dataset from Google Maps reviews and applied stopword removal using the Sastrawi library.Performed fine-tuning on the pre-trained IndoBERT model using the processed data.Developed a REST API for the model using FastAPI with comprehensive documentation. | |

TECHNICAL SKILLS

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| Languages: Python, C/C++, SQL (Postgres), Go, JavaScript |
| Frameworks & Libraries: PyTorch, TensorFlow, Keras, Scikit-Learn, OpenCV, Hugging Face, Pandas, NumPy, Matplotlib |
| MLOps & Tools: Git, Docker, Linux, AWS EC2, FastAPI, Vercel |