Rizky Ardi Maulana

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Education

Bandung Institute of Technology Bandung, Indonesia

B.Eng. Electrical Engineering, GPA: 3.62/4.00 (Cum Laude) Aug 2017 – Oct 2021

- 1st winner of mobile soccer competition at the Indonesian Robotic Contest 2019 (Regional Stage)
- 4th Winner of mobile soccer competition at the Indonesian Robotic Contest 2019 (National Stage)

Work Experiences

CAD-IT Consultant (Asia) Pte Ltd Bandung, Indonesia

Software Engineer − Computer Vision Jul 2021 – present

- Develop web application using a technology stack that encompasses Golang, Python, PostgreSQL, Redis, RabbitMQ, Minio, gRPC, Grafana, Prometheus, and Docker.
- Conducted research, designed, and executed 5 applications for object detection, defect identification, action recognition, and video analytics
- Conducted research and applied containerization through Docker for the development and deployment of computer vision applications.
- Designed and deployed computer vision applications as services with both REST and gRPC interfaces
- Explored the optimization of deploying computer vision applications using Onnx and TensorRT

Xirka Silicon Technology Bandung, Indonesia

Embedded Engineer Intern Jun 2020 – Aug 2020

- Researched the capability of Real Time Operating System in Xirka Ardunesia Microcontroller
- Implemented Real Time Operating System in Xirka's Smart Meter Project

Institut Teknologi Bandung Bandung, Indonesia

Microcontroller System Laboratory Assistant Mar 2021 – Jul 2021

- Served as a content writer for the Microcontroller System Laboratory course module introduced in 2021
- Provided supervision and guidance to students in the Microcontroller System Laboratory, aiding their understanding and success in the course

Computer System Architecture Laboratory Assistant Coordinator Sep 2020 – Dec 2020

- Tasked with preparing, planning, organizing, and executing the Computer System Architecture Course with 90 students
- Led and coordinated a team of 9 teaching assistants to ensure the smooth implementation of the course

Problem Solving using C Laboratory Assistant Jan 2020 – May 2020

- Provided supervision and guidance to students in the Problem Solving in C Laboratory, helping them understand the course and successfully pass

Projects

Paveview AI 2024

- Developed an AI-based platform featuring Road Damage Detection (RDD) and Road Damage Evaluation (RDE), aligned with international standards such as the Pavement Condition Index (PCI) and Surface Distress Index (SDI).
- Executed comprehensive preprocessing on datasets to refine data quality.
- Trained a cutting-edge object detection model, achieving a mean Average Precision (mAP) of 0.76 at an IoU threshold of 50%, indicating high accuracy in object identification.
- Designed and implemented the entity-relationship database schema in PostgreSQL for enhanced data management and scalability.
- Developed the core application features, including user and video management systems, leveraging an event-driven architecture within the Google Cloud Platform environment.
- Seamlessly integrated AI capabilities into the application, significantly contributing to the attainment of strategic business objectives.

Train Booking System 2023

- Designed a simple system for online book and buy train tickets. Inspired by KAI's booking system (Indonesian Railways Company).
- Developed essential functionalities, including train search and booking, seat selection, ticket management, and user management. Implemented the system using the Gin web framework in Golang for backend operations, Redis for efficient caching mechanisms, PostgreSQL for robust database management, and Next.js with React TypeScript for a dynamic user interface

Personal Protective Equipment (PPE) Inspection June 2022

- An automated computer vision system designed to identify whether a worker is appropriately equipped with the required Personal Protective Equipment (PPE) for a specific task or environment. The system examines five safety items, including helmets, safety glasses, masks, vests, safety gloves, and safety shoes.
- Implemented a database solution using PostgreSQL to record inspection outcomes, accessible via an interactive online dashboard.
- Deployed the inference engine on an Nvidia Jetson Nano for real-time analysis, with the remote server hosted on Heroku for seamless data management.

Moving Asset Tracking Jul 2021

- An Internet of Things (IoT) solution designed to track and monitor motorcycles. This system collects a variety of data, including location, speed, acceleration, gyroscope readings, driver details, fuel level, battery voltage, and ignition status. This data is transmitted to a server via MQTT and stored in a database and presented on a dashboard.

Organizational Experiences

Dagozilla Mobile Robot Team Bandung, Indonesia

Head of Electrical Division Jul 2019 – Oct 2020

- Responsible in electrical research and development of Dagozilla's third generation autonomous mobile soccer robot

Electrical and Embedded Engineer Sep 2018 – Jul 2019

- Designed and manufactured hardware of Dagozilla's Soccer Robot and Telepresence Robot
- Programmed the firmware of the Dagozilla Soccer Robot and Telepresence Robot to integrate the sensors and actuator

Skills

Languanges **:** Indonesian (Native), Javanese, English

Technical Skills : Web Development, C, C++, Golang, Python, Typescript, OpenCV, PostgreSQL, MongoDB, Redis, RabbitMQ, Prometheus, Git, Nginx, Docker, Pytorch, Onnx, TensorRT, React, HTML5, CSS, NextJS, Google Cloud Platform (GCP)

Interests **:** Software Engineering, Machine Learning, History, Badminton