



Ade Irman Budi Hendriawan

- Email : adeirman2705@gmail.com
- [Linkedin](#)
- Github : [Adeirman46](#)
- Phone : 081281195315

Education

| | |
|---|-------------------------------------|
| Bandung Institute Of Technology (ITB) Electrical Engineering, GPA 3.36 | Bandung, Indonesia 2021-2025 |
| State Senior High School 1 Of Tangerang City Mathematics and Sciences Major | Tangerang, Indonesia 2018 – 2021 |

Work Experience

| | |
|---|---|
| Riset AI Ltd. Electrical Engineer Intern | Bandung, Indonesia June 2024 - August 2024 |
| <ul style="list-style-type: none">• Developed Level 1 autonomous driving systems (Automatic Emergency Braking, Adaptive Cruise Control) for Toyota Avanza using YOLOv8-MultiTask and ZED stereo cameras for vehicle detection, lane segmentation, and depth estimation.• Reverse-engineered CAN-BUS protocols to optimize real-time communication and vehicle diagnostics.• Implemented Vision Language Models (Florence-2) with PID controllers for autonomous throttle and brake control. | |
| Autonomous Soccer Robotic Team (Dagozilla) Electrical Engineer | Bandung, Indonesia June 2022 - June 2024 |
| <ul style="list-style-type: none">• Designed and programmed ROS-based autonomous soccer robots for RoboCup MSL, focusing on multi-agent coordination and navigation.• Created custom PCBs (power distribution, encoder interfaces) and PID using STM32 microcontrollers. | |
| Self Employed / Self Study Machine Learning Engineer | Tangerang, Indonesia May 2021 – Present |
| <ul style="list-style-type: none">• Retrieval Augmented Generation (RAG) for Electrical Engineering courses, like electronics, control system, advanced mathematics, and six other courses.• Large Language Model (LLM) for Chip Design Automation, from prompt to chip.• Reinforcement Learning for Autonomous Vehicle Level 2 in CARLA Simulator. | |

Projects

Autonomous System

- **Level 2 Autonomous Car (Honda Brio):** Implemented Automatic Emergency Braking, Adaptive Cruise Control, Lane Keeping Assist and Driver Monitoring System using YOLO Panoptic v2 for panoptic segmentation, ROS2, and OpenCV.
- **Level 1 Autonomous Car (Toyota Avanza):** Integrated YOLOv8-MultiTask with ZED stereo cameras for real-time object detection, lane segmentation, and depth estimation.

- **RoboCup MSL Soccer Robots:** Designed ROS-based navigation algorithms for multi-agent autonomous robots, optimizing path planning and obstacle avoidance.

Chip Design

- **Sigma Delta Modulator ADC:** Simulated and optimized noise-shaping architectures in Cadence Virtuoso for high-precision analog-to-digital conversion.
- **Xoodyak Hash Function (Cryptographic):** Designed a lightweight cryptographic hash module in VHDL for secure data authentication.
- **FPGA Image Deraining Accelerator:** Developed real-time deraining pipelines using Verilog on Pynq Z1 FPGA, enhancing image clarity using Variational Auto Encoder (VAE)
- **MIPS32 CPU Architecture:** Built a 32-bit single cycle MIPS CPU in VHDL.
- **RISC-V 32 CPU Architecture:** Built a 32-bit single cycle RISC-V CPU in verilog.
- **Standard Cell Design:** Designed and implemented standard cells for CMOS, NAND, NOR, AND, OR, XOR, MUX, D-Latch, and DFF using Magic. Performed layout vs. schematic (LVS) checks with Netgen and conducted SPICE extraction simulations using NgSpice.
- **Chip Design Automation:** Leveraging LLM for Chip Design Automation, from prompt to chip.

Embedded & AI Applications

- **Industrial Automation (Omron PLC):** Programmed PLC controllers for temperature regulation in industrial systems.
- **ESP32Cam Money Detector:** Deployed TensorFlow Lite on ESP32 for real-time currency recognition to assist visually impaired users.
- **3D-Printed Teleoperated Arm Robot:** Enabled long-distance control via IMU sensors and WiFi communication.
- **Drone Object Detection:** Created object detection running on drone.

Machine Learning & NLP

- **Disaster Tweet Classifier:** Built a multimodal NLP model for real-time disaster-related tweet analysis.
- **PubMed Literature Skimming Model:** Developed an advanced NLP pipeline for extracting key insights from medical literature.

Web Scraping & Data Tools

- **E-commerce Data Pipeline:** Automated data collection from Shopee, Tokopedia, and Bukalapak using Python/Scrapy.
- **Travel Analytics Scraper:** Extracted pricing trends from Tiket.com for demand forecasting.

Skills and Interests

Technical: VHDL/Verilog, Cadence, OpenLane, Fusion 360, Linux, ROS2, Python, C/C++, PyTorch.

Language: Bahasa Indonesia, English

Interests: IC Design, Robotics, Control Engineering, Machine Learning, and Deep Learning.