Alim Satria Fi'i Wijaya Kusuma

Hardware Engineer · PCB Designer

Sleman Regency, Yogyakarta, Indonesia

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Personal Profile

A student at Universitas Gadjah Mada specializing in Instrumentation and Control Engineering Technology with a strong passion for Control Systems and Hardware Engineering. I am actively engage in diverse projects related to instrumentation and control systems, including coding microcontrollers, designing PCBs, and documenting projects using LaTeX and GitHub.

Education

Universitas Gadjah Mada *Yogyakarta, Indonesia*

Undergraduate degree in Instrumentation and Control Engineering Technology *2021 - Current*

Universitas Gadjah Mada *Yogyakarta, Indonesia*

Associate degree in Instrumentation Technology *2017 - 2021*

Work Experience

PT. Integrasi Teknologi Unggas (BroilerX) *Yogyakarta, Indonesia*

Hardware Engineer *Jan 2021 - Mar 2022*

- Developed an IoT devices to monitor the environment of broiler house.
- Responsible for the PCB design process, creating prototypes, communicating and collaborating on IoT integration in the device, and ensuring the device operates effectively.
- **Technical Skills:** PCB Design using KiCAD, Firmware programming using C++, Internet of Things
- **Soft Skills:** Teamwork, Time Management, Communication.

University Projects

Implementation of Flight Controller Design and PID Control on Quadrotor Attitude *Yogyakarta, Indonesia*

Universitas Gadjah Mada - Undergraduate *Dec 2022 - Current*

- Make and iterate PCB design of quadrotor flight controller to find the most compact and stable design using 8-bit microcontroller
- Tuning and refining the quadrotor attitude control using PID to make a stable attitude control and add feature to the program to log the IMU sensor and GPS data
- **Technical skill :** PCB design using KiCAD, Programinng in Processing 2 (Java), control system

Remake of Feedback ES151 *Yogyakarta, Indonesia*

Universitas Gadjah Mada - Undergraduate *Dec 2022*

- I have undertaken the project of reviving and repairing an old Feedback ES151 system to make it suitable for learning and demonstrating PID control for velocity and position of a DC motor. Additionally, I am designing a Human-Machine Interface (HMI) using LabView, which will enable the machine to interact with and be controlled through a computer interface.
- Code the microcontroller using C++ and bridge the communication between the computer (HMI) and the machine
- **Technical skill :** Programming in C++, Building HMI with LabVIEW

Design and Implementation of Light Ambient Control System on Broiler Farm Using PID Controller *Yogyakarta, Indonesia*

Universitas Gadjah Mada - Assosiate *2020*

- I am working on the development of a device that aims to maintain a consistent level of light intensity within broiler chicken cages. This device utilizes a microcontroller connected to a light sensor and an LED. Additionally, I am designing a Human-Machine Interface (HMI) using LabVIEW. The device is capable of interacting with and being controlled through a web application that is accessible over the internet.
- **Technical skill :** PCB Design using EAGLE, Firmware programming using C++, HMI Programming using LabVIEW

Skills

Programming	Python, LabView, C, C++, Matlab.
Hardware Design	Kicad, Eagle
Soft Skills	Teamwork, Problem-solving, Documentation.

Interests

Linux

Since 2017, I developed a deep affection for Linux, which I utilize extensively for coding and hardware design purposes. My preferred distribution is KDE Neon due to its visually appealing interface.

Technical Writing

I have documented several projects related to control systems and hardware design on my GitHub profile. One project that stands out as a personal favorite is the revival of an old PID tuning machine for the control system lab. For this project, I created the Human-Machine Interface (HMI) using LabView and wrote the main controller code in C++. I invite you to explore the project documentation by following this link.

LaTeX

I have a strong appreciation for using LaTeX to compose my lab reports, as it allows me to create visually appealing, stylish, and well-organized documents. I have even taken the initiative to develop a lab report template. Feel free to explore my template by visiting this link.

Languages

English	Professional proficiency (TOEFL ITP Score : 567/677)
Indonesian	Native proficiency
Javanese	Native proficiency

References available upon request.