Jonathan Oktaviano Frizzy

+62 813 5747 3781 | jonathanoktavianofrizzy@gmail.com | LinkedIn | GitHub | Portfolio | Surabaya, Indonesia

Education

Institut Teknologi Sepuluh Nopember — Surabaya, Indonesia
2nd Year in Electrical Automation Engineering — *GPA: 3.49/4.00*
Jul 2022 – Present

Skills

Languages: C/C++, C#, Python, JavaScript, PHP, LabVIEW, MATLAB

Technologies: Flask, Streamlit, Node.js, React.js, Git, AWS, RabbitMQ, OpenCV, PyTorch, Mediapipe, TensorFlow, Arduino, ESP32, STM32, PLC Omron, PLC Mitsubishi, ROS

Methodologies: OOP, Functional Programming

Experience

Chico Service Electronic — Tulungagung, Indonesia
Electronic Engineer — *July 2021 – Dec 2021, Full-time*

- Designing a PCB for a DIY audio driver assembly using Autodesk Fusion 360/Eagle software, employing manual printing, followed by conducting test trials on the audio driver.
- Designing a custom Power Supply and Amplifier box utilizing an external audio driver, custom 10A power supply, and polarity protection circuitry.
- Designing a mini power supply or mini adapter complete with a casing box.
- Performing troubleshooting and repairs on electronic devices such as Television, electric fans, power outlets, sound mixer, and remote controls.

SMAN 1 Durenan — Trenggalek, Indonesia
Teaching Assistant — *Jan 2022 – Feb 2022, Part-time*

- Delivering instruction on the fundamentals of electrical circuits theory based on the laws of physics, followed by hands-on guidance in assembling basic electrical circuits such as series and parallel, alongside introducing various DC and AC electronic components.
- Instructing foundational algorithms and programming principles using the C language, subsequently applied to microcontrollers for creating simple projects employing components like LEDs, HC-SR04 sensors, and others.
- Providing instruction on constructing both analog and microcontroller-based line tracer robots, offering practical exercises and operational guidance

Digitalent KOMINFO — Surabaya, Indonesia
Teaching Assistant — *Jan 2023 – Jun 2023, Part-time*

- Working on and evaluating the code submitted by participants Junior Website Developer.
- Compiling attendance data for each session.
- Conducting tests on each participant's Final Project, and then assigning assessment points to each feature of the projects submitted by the participants

Barunastra ITS — Surabaya, Indonesia
Electrical Designer — *Dec 2022 – Present, Full-time*

- I am involved in the design and development of electrical architecture and battery management systems for our projects. This includes creating comprehensive electrical architectures that ensure efficient and reliable power distribution, designing custom PCB layouts for specific power and communication needs, and developing battery management systems to optimize performance and safety in International Roboboat Competition 2023 and 2024.
- Developing an emergency control breaker system to enhance safety and reliability.
- Managing the placement and safety protocols of all electrical components within the robot to ensure optimal performance and compliance with safety standards.
- Designing the installation scheme of electronic hardware components for the project, comprising sensing components, actuators, and radio transmitters.

PLC and Supervisory Control System Laboratory ITS Surabaya, Indonesia
Member *Dec 2022 – Present, Full-time*

- Studying programmable logic control and automation hierarchy, with a focus on industrial automation development.

KKN Tematik Institut Teknologi Sepuluh Nopember Surabaya–Sidoarjo, Indonesia
Leader *Aug 2023 – Oct 2023, Part-time*

- Fully responsible as the project manager, overseeing the timeline, finances, and logistics in constructing the Smart Integrated Water Quality Monitoring System project.
- Creating a monitoring device website using PHP to store data from all sensors of the device, accessible from anywhere.
- Designing the installation scheme of electronic hardware components for the project, comprising sensing components, actuators, and radio transmitters.

Wirausaha Merdeka ITS Surabaya, Indonesia
Electronics Engineer *June 2023 – Oct 2023, Part-time*

- I designed and developed the electrical system for the "Beginner Kit Electronics" product using Autodesk Fusion 360 for the design and Proteus for circuit simulation. Additionally, I participated in business management training to meet specific business criteria and fulfill the requirements for the Free Entrepreneurship activity evaluation. Here is the documentation.

Awards & Achievements

Autonomy Challenge at International Roboboat Competition Secured 3rd place by integrating and coordinating all electronic components in 'Nala Proteus V.2,' including PCB, sensors, and actuators. Developed electrical and communication architecture, implemented with a success rate of 90 percent (Feb 2024)

Autonomy Challenge at International Roboboat Competition 1st place, Working on and combining all electronic devices in "Nala Proteus" such as PCB and others.Designing electrical architecture and battery managament. (Mar 2023)

Autonomous Tourism Surface Vehicle Prototype Contest, Kontes Kapal Cepat Tak Berawak (KKCTBN) Secured the 1st place by Took part in helping on developing electrical systems for Barunastra ITS' "Nala Athena" Autonomous Tourism Surface Vehicle Prototype Ship. (Oct 2023)

LKS Nasional Mobile Robotic Secured the 3rd place by creating a robot utilizing a National Instruments controller, MyRIO, integrated with actuators such as servos and PG motors, and featuring a camera for barcode, color, and obstacle detection, serving as a hospital service robot (Oct 2022)

SMK Sore Tulungagung Award: Graduated as the highest ranked student. (Jun 2022)

Projects

Portofolio Webiste | *Website*

- For this project, I created a portfolio website using semantic HTML and SCSS. The HTML provides a clear and meaningful structure, while the SCSS ensures a cohesive and visually appealing design. This website effectively showcases my skills in web development and branding.

STM32 Training Kit | *GitHub*

- I meticulously engineered this microcontroller utilizing the STM32F103C8T6 IC, ensuring a precise and tailored design to meet the specific requirements of the project. I employed KiCAD software for the schematic capture and PCB layout, which allowed for a highly detailed and efficient design process. This comprehensive approach resulted in the creation of the STM32 Training Kit for Barunastra ITS, aimed at providing a robust and versatile training tool. The kit is designed to facilitate hands-on learning and experimentation, equipping users with practical experience in microcontroller programming and system development.

Electric Vehicle Sensor Monitoring | *GitHub*

- In this project, I developed a custom PCB for an ESP32 microcontroller, which is equipped with an embedded CAN bus module. The design and implementation were specifically tailored to meet the needs of electric vehicle monitoring. This custom PCB enables efficient communication and data transmission within the vehicle's network, ensuring real-time monitoring and control. The project showcases my ability to design specialized hardware solutions for advanced applications in the automotive industry.

Smart Integrated Water Quality Monitoring System | *GitHub*

- This project was part of my Community Empowerment Program (KKN), with a focus on thematic environmental issues. The primary goal was to monitor the water quality of ponds by measuring key parameters such as temperature, pH, and oxygen levels. To facilitate the analysis and sharing of this data, I also developed a website to store and display all the collected information. This project aimed to provide valuable insights into the environmental health of local water bodies and support efforts in maintaining and improving water quality.

CCTV Thermal HVAC | *GitHub*

- In this project, I integrated an environmental thermal detection system using Thermal CCTV with an HVAC cooling system to enhance energy efficiency. The system automatically cools the room based on temperature readings from the Thermal CCTV. Additionally, I created a universal remote to control the HVAC system. I used Python and C for programming and developed a monitoring website. Key technologies included YOLO for object detection and Flask for web development.

Line Tracer Analog | *Linkedin*

- I developed an Analog Line Tracer using multiple Operational Amplifier ICs, relays, and various sensor circuits for competitive use. This involved designing the entire electronic circuitry of the robot, integrating all components, and testing the sensors on the track to optimize robot control.

Oil Navigating Ship | *LinkedIn*

- In this project, I assumed the dual role of an electrical and mechanical conceptor and consultant. My duties encompassed the design of electrical and communication diagrams for the ship, ensuring comprehensive and efficient systems integration. Additionally, I provided valuable recommendations for implementing ship maneuvers, contributing to the overall functionality and safety of the vessel. My multifaceted involvement underscores my expertise in both electrical and mechanical engineering disciplines, as well as my capacity to offer strategic insights across various aspects of maritime engineering projects.

Certificates

Project Manager by Google *Mar 2024*
Foundation Project Management Certificate.

Artificial Intelligence for Business by NASBA *Mar 2024*
Introduction to Artificial Intelligence Certificate.

Front-end Website Developer by Dicoding Indonesia *Mar 2024*
The front-end website utilized Bootstrap and JavaScript for enhanced interactivity. Certificate.

Organizations

Barunastra ITS *Dec 2022 – Present*
Staff Electrical Division

UKM Robotika ITS *Oct 2022 – Present*
Member