M HILAL YAHYA HIDAYAT
Electrical Engineer

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EXPERIENCE

PT. STECHOQ Robotika Indonesia – Sleman, Indonesia
Project Manager & Hardware Engineer Intern (February-June 2022)

- Successfully directing team consisting multiple engineering disciplines to develop LIDAR based Trackless Automatic Guided Vehicle (AGV) for industrial warehouse management. The project was completed in 3 month period and being one of the successful project in intern program.
- Developing electrical system for Trackless AGV using NVidia Jetson as the main processing unit and STM32F4 as low level control.
- Developing firmware for Trackless AGV with C++ programming language. Firmware was developed using STM32CubeIDE and implementing FreeRTOS and FATFS middleware. Developed firmware was able to handle CAN and UART communication between other module.
- Developing autonomous navigation by using Robotic Operating System (ROS) middleware on C++ and Python. The systems was able to navigate to the desired place efficiently.

PT. Lentera Bumi Nusantara – Tasikmalaya, Indonesia
Intern (May 2021)

- Providing preliminary analysis at the initiation stage of 5 kW Permanent Magnet Synchronous Motor (PMSM) development. Directly mentored by Ricky Elson.
- Assisting Finite Element Method (FEM) analysis of 5 kW PMSM design using Infolytica MagNet.
- Assisting stator winding in 10 kW Permanent Magnet Synchronous Generator (PMSG) project.

Garuda UNY Team – Sleman, Indonesia
Head of Electrical Division (November 2021 – present)

- Planning 6 research plan in preparation of electric vehicle competition.
- Initiating Race Data Engineering and Modelling-Simulation branch.

Senior Electrical Engineer (September 2020 - November 2021)

- Inventing a novel methodology for estimating electric vehicle routes from Wat Arun, Thailand to Yu Garden, China as Shell Eco-Marathon Electric Mobility Challenge. The paper was selected as Top Team Submission in Asia Region, competing with more than 300 universities around the globe
- Initiating modeling and simulation method to optimize cost and time in Formula Student and Shell Eco-Marathon car development and production up to 20%.
- Leading software development for Autonomous Programming Challenge by Shell. Successfully develop an autonomous vehicle program by implementing perception, navigation, and control system of an autonomous vehicle using ROS Framework within 3 months.
- Developing electrical powertrain system, energy storage system, embedded charging system, and vehicle control unit for Garuda Kencana Project Car. Able to complete the design in 3 months and qualified in Teknofest Turkey International Efficiency Challenge at 6th place.

Junior Electrical Engineer (September 2019 - September 2020)

- Developing AVR-based hardware system of Data Acquisition and Telemetry System (DATS) for Formula Student car and Shell Eco-Marathon Car, interfacing 10 sensors with 25 variables.
- Designing and manufacturing lightweight electrical enclosure using Solidwork and 3D print.

Smanssa Robotic Club – Salatiga, Indonesia
Project Leader for OPSI Competition (September 2017 - July 2018)

- Leading research about implementation of CNC as agriculture robot. The paper was selected as finalist competing with 100+ others high school research.

PROJECT

Automatic Guided Vehicle (AGV) Project – February 2022

Garuda Kencana Electric Vehicle Project – June 2021

20 kWh Electric Vehicle Battery Pack – June 2021

5 kW Field Oriented Control PMSM Controller – January 2021

Smart Hydroponics (SONIC) IoT – June 2020

Laptime Modelling and Simulation – May 2020

Data Acquisition and Telemetry System for Race Car Application – 2019

Automatic Planting CNC (ANTIC) - 2018

HONORS & AWARDS

3rd Place for Shell Eco Marathon: Future Rider – December, 2021

3rd Place for PLN ICE Electric Vehicle Design Competition – June, 2021

1st Place for Shell Bonus Challenges - 2020

Shell Autonomous Programming Competition - 2020

Top Teams Asia-Middle East Region for Electric Mobility - 2020

3rd Place Global for Adobe Digital Literacy Award - 2020

Asian Children's Film Festival Nominee - 2018

Finalist Olimpiade Penelitian Siswa Indonesia - 2018

EDUCATION

UNIVERSITAS NEGERI YOGYAKARTA (2019 - 2023)
Bachelor of Electrical Engineering – 3.17 GPA

FPT UNIVERSITY VIETNAM (2020)
Software Engineering (Mobile Android)

SMAN 1 SALATIGA (2013 - 2017)
Sciences – OSIS, SRC, Videography Extra

SKILLS

Electrical Design: Solidwork Electrical, KiCad, Altium, LTSpice
3D CAD: Solidworks, Autodesk Inventor, Autodesk Fusion
CAE: Ansys Fluent. Siemens Motorsolve, Infolytica MagNet, MATLAB/Simulink
Programming Language: C, C++, VHDL, Java, Python, MATLAB
Non Techinal: DocuWiki, MS Team, Office 365
Softskill: Project Management, Teamwork, Team Knowledge Management, Asset Management, Public Speaking
Certification: Mobile Software Engineering by FPT University; The Complete Self-Driving Car Course - Applied Deep Learning, KMMI UNY 2021: Internet of Things