Resha Dwika Hefni Al-Fahsi

Robotics and Machine Learning Enthusiast

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About

Technical Skills C/C++, Python, Computer Vision, Robotics, Deep Learning
Languages Indonesian, English

Education

Universitas Gadjah Mada
Bachelor of Electrical Engineering — Yogyakarta, Indonesia (2016–2020)

Work Experience and Organization

Neurabot
AI Engineer Intern — Yogyakarta, Indonesia (December 2020 – March 2021)

- Developed an auto-tagging system and microscanner firmware for medical imaging.
- Programming Language: Python, C++
- Software, Tools and Libraries: PyTorch, OpenCV, scikit-learn, PlatformIO, Django

UGM AI CENTER
Research Assistant — Yogyakarta, Indonesia (June 2019 – December 2020)

- Involved in many Robotics, Computer Vision and Machine Learning Projects:
  - Developed back end of automated machine learning pipeline for data scientist to increase their productivity.
  - Developed service robot platform.
- Programming Language: Python, C++
- Software, Tools and Libraries: Docker, Flask, PyTorch, scikit-learn, OpenCV, ROS, Gazebo, RViz, Qt

Honeywell Laboratory at Department of Electrical and Information Engineering UGM
Research and Development Intern — Yogyakarta, Indonesia (January – May 2019)

- Developed a dashboard design for face recognition system in Honeywell Laboratory of Department of Electrical and Information Engineering UGM.
- Programming Language: Python
- Software, Tools and Libraries: TensorFlow, OpenCV, Dash by Plotly, Qt

Department of Electrical and Information Engineering UGM
Lecturer Assistant — Yogyakarta, Indonesia (August 2017 – January 2018)

- Lecturer Assistant for Basic Programming Course.
- Programming Language: C
- Software, Tools and Libraries: Repl.it

Gadjah Mada Robotic Team
Senior Programmer Team Lead — Yogyakarta, Indonesia (November 2016 – October 2019)

- Senior Programmer and Team Leader for University's Robotic Research Team in Wheeled Soccer Robot Division:
  - Designed robot software architecture using ROS framework.
  - Implemented RRT* algorithm for the robot path planning.
  - Designed robot communication system, consist of base station, local database using hash table and peer to peer communication using TCP unicast and UDP multicast.
  - Designed decision-making algorithm for autonomus robot using FSM.
  - Implemented robot localization algorithm using Kalman Filter and Particle Filter.
  - Developed ball detection algorithm.
  - Implemented Artificial Neural Network in C++.
- Programming Language: Python, C++
- Software, Tools and Libraries: ROS, Qt, OpenCV, Protobuf, Boost

Achievement

Top 6 for Grand Prize and Excellence Award in GUGEN 2019
P-Ban.Com Corp. — Tokyo, Japan (December 2019)

Gold Award in AI-JAM Japan 2019
AI-JAM Japan — Tokyo, Japan (December 2019)

Top 10 Finalist Indosat Ooredoo HackData
PT Indosat Ooredoo — Jakarta, Indonesia (November 2019)

Best Paper Award of Poster Presentation and Exhibition Session
The 21^{th} International Electronics Symposium (IES) 2019 — Surabaya, Indonesia (September 2019)

3^{rd} Place in OpenVINO Hackathon 2019
PT Synnex Metrodata Indonesia — Jakarta, Indonesia (August 2019)

2^{nd} Runner Up in DILo Hackathon Festival 2019 Yogyakarta
DILo (Digital Innovation Lounge) — Yogyakarta, Indonesia (August 2019)

3^{rd} **Place and Best Strategy in Wheeled Soccer Robot Contest of Kontes Robot Indonesia Regional 3**
Kementerian Riset, Teknologi dan Pendidikan Tinggi Republik Indonesia Semarang, Indonesia (April 2018)

Publication

- **Laboratory Attendance Dashboard Website Based on Face Recognition System**

  R. D. H. Al-Fahsi, Aleksander Patar Jiwandono Pardosi, Kevin Aldian Winanta, Thea Kirana, Okta Fajar Suryani, Igi Ardiyanto. (2019). "Laboratory Attendance Dashboard Website Based on Face Recognition System." 2019 International Electronics Symposium (IES). (pp. 19-23).

- **Moving Objects Counting Dashboard Web Application Design**

  K. A. Winanta, Thea Kirana, Resha Dwika Hefni Al-Fahsi, Aleksander Patar Jiwandono Pardosi, Okta Fajar Suryani, Igi Ardiyanto. (2019). "Moving Objects Counting Dashboard Web Application Design." 2019 International Electronics Symposium (IES). (pp. 45-48).

- **NightOwl: Robotic Platform for Wheeled Service Robot**

  R. D. H. Al-Fahsi, Kevin Aldian Winanta, Fauzan Pradana, Igi Ardiyanto, Adha Imam Cahyadi. (2020). "NightOwl: Robotic Platform for Wheeled Service Robot ." arXiv:2010.11505.