RADITYO FAJAR PAMUNGKAS

Sidoarjo, East Java, Indonesia radityofajar@gmail.com
linkedin.com/in/radityo-fajar-pamungkas-ba1496148 +62 82249313303
https://github.com/Radityofajar

EDUCATION

Kookmin University (Master Student Program) Seoul, South Korea
Electronics Engineering / Wireless Communication and AI Laboratory 2022 – Present
Focus: Energy management system, Virtual power plant (VPP), anomaly/fault detection using unsupervised learning, and Industrial Internet of Things (IIoT)

University of Indonesia (Bachelor's degree) West Java, Indonesia
Electrical Engineering / Energy and Power System Engineering 2017 - 2021
Overall GPA: 3.48 / 4.00
Thesis: Hot Spot Detection Application for Solar PV Module Based on Digital Image Processing

PROFESSIONAL EXPERIENCE

Excellent Researcher | WiCom AI Laboratory | Kookmin University, Seoul **Feb 2022 – Present**

- Conducted scientific research in wireless communication and artificial intelligence areas.
- Presented and published papers at domestic and international conferences.
- Published domestic and international patents.
- Implemented high-end technology in the Industrial sector.

Aug 2020 – Sept 2021

Junior Researcher | Tropical Renewable Energy Research Center | Depok, West Java

- Designed and implemented a computer vision algorithm for defect detection on solar PV modules using python and openCV to automate monitoring with approximately 100 % higher faster.
- Collected visual images, thermal images, temperature, and IV curve data of defect and standard solar PVmodules and created a database for future research.
- Developed a prototype application for defect detection to optimize the monitoring and maintenance of solar power plants with 92% accuracy.

Head of Electrical Engineer | Autonomous Marine Vehicles | Depok, West Java **Sept 2019 – Sept 2020**

- Engineered autonomous surface vehicle (ASV) Makara 9 mark II and underwater remotely operated vehicle (ROV) Makara X with robust design and easy assembly to compete in Southeast Asia and International competition.
- Organized and led weekly meetings and activities for five staff in the electrical engineering division.

Head of Research & Development | Autonomous Marine Vehicle | Depok, West Java **Feb 2018 – Sept 2019**

- Submitted a proposal for the research grant program to gain financial support and received a grant of up to 220 million Rupiah.
- Wrote papers or patents for ASV and ROV, with two published patents in 2020.

Electrical Designer – Intern | PT.Kriya Eratama Intech | Cikarang, West Java **Aug 2020 – Sept 2020**

- Designed and built a modern vending machine prototype using three stepper motors, Atmega 2560, Raspberry pi, and a touchscreen monitor with minimum cost.
- Designed a power board for vending machine using Autodesk Eagle with robust design and easy to maintenance
- Programmed control systems and graphical user interface (GUI) for a modern vending machine using C++ and Python with PyQt5 library.

HONORS & AWARDS

3rd place on Kontes Kapal Cepat Tak Berawak Nasional (KKCTBN) ASV Category	| Malang, Indonesia	**2019**
3rd place on the 12th AUVSI International Roboboat Competition	| Florida, USA	**2019**
1st place on 3rd ASEAN MATE ROV Competition Explorer Category	| Surabaya, Indonesia	**2019**
2nd place on Kontes Kapal Cepat Tak Berawak Nasional (KKCTBN) ASV Category	| Madura, Indonesia	**2018**
1st place on 2nd ASEAN MATE ROV Competition Explorer Category	| Surabaya, Indonesia	**2018**
Grantee of Program Hibah Desain Prototipe (PHD-Pro)	| Depok, Indonesia	**2019**
Finalist Pekan Karya Mahasiswa Riset Eksakta (PKM-RE)	| North Sumatra	**2021**

ORGANIZATIONS

Autonomous Marine Vehicle	| Head of Electrical Engineer	| Universitas Indonesia	**2019-2020**
	| Head of Research & Development	| Universitas Indonesia	**2018-2020**
	| Mechanical Engineer Staff	| Universitas Indonesia	**2017-2018**

OTHER PROJECTS

Electrical Engineer | SquareTech | Smart Chicken Coop | Depok, West Java **2020-2021**

- Wired and Integrated multiple sensors and actuators for a smart chicken coop prototype based on IoT technologies.
- Programmed a basic data acquisition system to monitor humidity, temperature, and luminous intensitywith 80% accuracy.
- Programmed a PID controller to control the heater, lamp, and exhaust power level.

Researcher | Wireless Communication and AI Lab | 5G Small Cell | Seoul, South Korea **2022-Present**

- Designed of 5G small-cell IoT platform technology with the industrial manufacturing facility and IoT equipment integration.
- Designed OPC-UA edge server for AI execution and storage database in an industrial IoT environment.
- Developed and implemented an interworking 5G small-cell IoT platform for industrial manufacturing facilities
- Implemented OPC-UA, Modbus, MQTT, etc., for industrial IoT platform integration.

PATENTS

- 장영민, Radityo Fajar Pamungkas, inventors. An Apparatus and Method for Detecting Time Series Anomalies using an Isolation Forest-based Adaptive Threshold. Patent Application number: 10-2022-0143226. 2022.
- Budiyanto MA, Syahidah A, Azharrisman F, Kurnianto IR, Pamungkas RF, inventors. KAPAL AUTONOMOUSMAKARA 09: WAHANA PEMETAAN DANAU OTOMATIS. S00202008265. 2020. https://scholar.ui.ac.id/en/publications/kapal-autonomous-makara-09-wahana-pemetaan-danau-otomatis
- Budiyanto MA, Syahidah A, Azharrisman F, Kurnianto IR, Pamungkas RF, inventors. UNDERWATER ROV MAKARA X: SURVEI BAWAH LAUT MENGGUNAKAN REMOTELY OPERATED. P00202007816. 2020. https://scholar.ui.ac.id/en/publications/underwater-rov-makara-x-survei-bawah-laut-menggunakan-remotely-op
- Makara 09 Mark II-Autonomous Surface Vehicle. RoboNation. 2019. https://robonation.org/app/uploads/sites/3/2019/10/UI_RB19_TDR.pdf

CONFERENCE

7th International Symposium of Applied Chemistry (ISAC 2021) **Presented, 2021**

Titled: Performance Test of Negative Ion Plasma as Air Purifier to Degrade Volatile Organic Compounds (Case Study for Ethanol and Toluene)

32nd Joint Conference on Communication and Information (JCCI 2022) **Presented, 2022**

Titled: Data Anomaly Detection in IoT System Based on Extended Isolation Forest and Sliding Window

13th International Conference on Ubiquitous and Future Network (ICUFN 2022) **Presented, 2022**

Titled: Abnormal Voltage Detection in On-Grid PV-ESS System by Support Vector Machine with Principal Component Analysis

3rd Korea Artificial Intelligence Conference **Presented, 2022**

Titled: Deep Learning-based Photovoltaic Panels Defect Detection using Aerial Thermography Imaging

1st Korea Energy Conference **Presented, 2022**

Titled Paper 1: Solar Photovoltaic Modules Fault Classification Based on Deep Learning

Titled Paper 2: Forecasting of Building Electricity Consumption Based on Weather Data

Titled Paper 3: Solar Power Generation Forecasting Based on Regional Weather