Hanif Rachmadani

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EDUCATION

B.Eng. Electrical Engineering, University of Indonesia *Jul 2016 – Jan 2021*

- Area: Biomedical Engineering
- GPA: 3.43 / 4.00
- Bachelor Thesis: “Design of Wireless ESP-32-Based Processing Board for EMG Signal Analysis”.

WORK EXPERIENCE

Software Engineer, PT. Powerbrain Automasi Energi *Apr 2022 – Present*

- Developed, implemented, and maintained data logging service for client’s equipment across multiple sites.
- Developed custom dashboard for our clients in conjunction with our logging service.
- Provided novel data logging solutions for clients’ specific edge cases.
- Performed on-site installation and setup of SMA Sunnyportal and Huawei FusionSolar inverter monitoring service.
- Contributed to multiple audits of client’s HVAC systems by leveraging expertise in data logging.

Hardware Engineer Intern, PT. Powerbrain Automasi Energi *Oct 2021 – Apr 2022*

- Designed multiple hardware prototypes of cellular Modbus RTU logger.
- Developed and applied embedded C++ algorithms for acquiring Modbus RTU data from industrial devices.
- Ensured successful deployment of prototype Modbus RTU logger via on-site technical support.

Research Assistant Intern, IMERI (Indonesia Medical Education & Research Institute) *Jul 2019 – Sep 2019*

- Contributed in iEEG-based auditory neuroscience research by applying signal analysis techniques.
- Developed and implemented algorithms for data processing and analysis of iEEG data.
- Collaborated with the lead researcher to prepare and present findings at a conference’s poster presentation.

TECHNICAL SKILLS & INTERESTS

- **Programming**: C++, Python, JavaScript/TypeScript, MATLAB
- **Web Development**: HTML, CSS, React
- **Database**: PostgreSQL
- **Data Visualization**: Grafana
- **IoT / Embedded System**: MQTT, Modbus RTU/TCP, Arduino, Espressif ESP Series
- **Engineering**: Basic PCB Design and Fabrication, 3D Modelling, 3D Printing
- **Languages**: Indonesian (native), English (IELTS 8.0), German (intermediate)
- **Interests**: On/Off-Grid Solar System, Industrial Data Acquisition, Signal Processing, Neuroscience, BCI

AWARDS

- Fresh Graduate Academy Digital Talent Scholarship from Ministry of Communication. and Informatics (KOMINFO) – Jakarta, Indonesia 2021

POSTER PRESENTATION

- Rachmadani, H., Yusuf, P. A., Kral, A. (2019, November). Effects of Different Stimulation Levels on Functional Connectivity of Primary & Secondary Auditory Field in Hearing and Deaf Cats. 4th ICE on IMERI, Jakarta, Indonesia.

PROJECTS

- **KDL Solar Monitoring - 2023**
  A Solar Plant Monitoring System Project—developed for our client PT. Krakatau Chandra Energy (formerly PT Krakatau Daya Listrik) for their solar plants at Cilegon, Banten. It utilizes Huawei's FusionSolar OpenAPI to collect plant's statistics, storing it in a local database, and display the metrics on a custom dashboard, located in the board's meeting room. This system offers a cost-effective and streamlined solution compared to previous solution, since it takes advantage of existing logging system, rather than performing data acquisition concurrently.

- **Jayapura Department of Forestry – GIZ Solar Monitoring - 2023**
  A Hybrid Solar Plant Monitoring System Project—developed for our client GIZ *(Deutsche Gesellschaft für Internationale Zusammenarbeit),* as part of their FORCLIME programme, in collaboration Jayapura Department of Forestry in Papua province. It is a custom end-to-end monitoring system tailored for use with our recently installed hybrid solar plant. It uses Modbus TCP communication protocol to acquire generation statistics from a hybrid inverter (SMA) and store the data locally in a compact server. Furthermore, it displays the acquired statistics in a custom dashboard on a nearby TV wirelessly via the Internet. This system allows our client to observe the activity of their solar plant and perform pre-emptive maintenance if needed.

- **PJB Muara Karang Inverter Data Logging - 2022**
  An Inverter Data Logging System Project—developed for our client PT *Pembangkitan Jawa-Bali* (now PT PLN Nusantara Power) and implemented in one of their plants at Muara Karang, North Jakarta. Comprised of a central server computer and loggers installed at 5 solar inverter sites, our system was able to pull crucial data from all inverters and store it locally in PJB's own secure database. In addition, our algorithm was specifically designed to run alongside existing third-party loggers connected the inverter. This solution grants our client the ability to access solar plants' generation statistics both online from third-party cloud services and locally from their own secure database, reducing their reliant on foreign third-party products.

- **SML HVAC System Data Logging - 2022**
  A Pilot Custom Data Logging System Project—developed for our client PT Sinarmas Land and installed in their Green Office Park 6 building at BSD City, Tangerang. It utilizes the Modbus RTU communication protocol and single-board computer to acquire critical data from the building's HVAC chillers and send it to Powerbrain's cloud server which can be access using APIs. This solution allows our client to remotely retrieve the data and attains valuable insight from it, eliminating the necessity of manual logging, and thus reducing maintenance costs.