Firman Nuzul Herdiana

Date of Birth	: Bandung, March 31, 1998
Address	: Komp. Permata Biru F. 15
Phone	: +62 82234569805
Email	: firmann48@gmail.com

SUMMARY

Professional engineer with 3+ years of experience in Embedded Systems, specializing in designing, developing, and integrating embedded solutions for industrial automation, IoT, and sensor-based systems. Expertise includes low-level firmware development, microcontroller interfacing, real-time processing, and hardware-software integration.
Strong foundation in web development, software engineering, relational databases (RDBMS), networking, and data analytics, enabling development of full-stack, end-to-end systems that bridge embedded hardware with modern digital platforms.
A dynamic, fast-learning engineer capable of working independently or collaboratively in multidisciplinary teams, with a proven track record of delivering scalable and maintainable solutions.

EDUCATION

SMAN 1 Cileunyi (2013 - 2016)

Politeknik Negeri Jakarta (2016 - 2019)
D3 Electrical Engineering (Electronic)

SKILLS

- Programming Languages : C/C++, Python, Go, JavaScript
- Embedded Systems : Raspberry Pi, ESP32, Interfaces & Protocols (UART, I2C, SPI, Ethernet, Bluetooth, Wi-Fi, MQTT, LoRa, Modbus RS-485, GSM/GPRS)
- Operating Systems : Windows OS, Linux
- Hardware Design : PCB Design, Circuit Analysis, Embedded Firmware
- Database : MySQL, PostgreSQL
- Soft Skills : Problem Solving, Public Speaking, Management, Research, Product Management, Product Development, Product Innovation

EXPERIENCE

PT Agni Pradipa Indrajaya – Jakarta, Indonesia
Embedded Engineer/Researcher (March 2023 – Present)

- Developed and produced sensor nodes under the Badu Digital brand for applications in structural health monitoring and environmental sensing. Sensor types include accelerometers, tiltmeters, strain gauges, displacement sensors, anemometers, material temperature sensors, ATRH sensors, as well as hydrology and infrastructure inspection sensors.
- Engineered and manufactured Smart Water Meters based on Fluidic Oscillation technology, achieving high measurement accuracy (R200). Integrated with automatic district metering areas (DMA), pressure transmitters, and shut-off valves under the Water Point brand to support real-time urban water management.
- Designed electrical systems and product architectures tailored to client requirements, from concept to implementation, ensuring performance, scalability, and cost-efficiency.
- Conducted applied research and continuous technology scouting to identify new tools, protocols, and design methodologies—enabling proactive problem solving and innovation in product development.

- Programmed and deployed embedded software for microcontroller-based systems, interfacing with various sensor arrays and automation hardware, ensuring reliability in real-world industrial and environmental conditions.
- Supervised production team operations, ensuring adherence to quality assurance standards, optimizing workflow, and meeting project delivery timelines in high-demand manufacturing environments.
- Designed and implemented firmware and software systems for data logger integration, enabling real-time monitoring, data acquisition, and analysis across sensor networks and embedded platforms.

PT Struktur Pintar Indonesia – Jakarta, Indonesia
Embedded Engineer (November 2021- February 2023)

- Designed and developed customized electrical systems based on client specifications, covering the full engineering cycle—from requirement analysis, schematic design, prototyping, to deployment.
- Researched and evaluated emerging technologies (e.g., low-power communication protocols, sensor innovations, and embedded platforms) to implement scalable and future-proof solutions, enabling proactive problem-solving for non-standard engineering challenges.
- Developed embedded software components for automation systems using microcontrollers, integrating sensor interfaces, communication stacks, and control algorithms to ensure stable and responsive operation in real-world applications..
- Collaborated cross-functionally with hardware, firmware, and software teams to build end-to-end embedded solutions, ensuring alignment across system architecture, electrical design, and software integration.
- Diagnosed and resolved issues in electrical systems, including malfunctions in electro-valves, sensors, and power circuitry—applying systematic debugging techniques and root cause analysis.
- Performed regression and post-modification testing on electrical systems to validate design changes, improve reliability, and document performance against technical benchmark.

PD PAL JAYA – Jakarta, Indonesia
Engineer (June 2021 – October 2021)

- Executed routine maintenance and corrective repairs on deployed electrical systems to ensure long-term operational reliability and minimize downtime in critical environments.
- Specified and integrated key electrical components such as cables, connectors, fuses, and circuit breakers tailored to the requirements of monitoring systems and weapons detection systems, ensuring compliance with safety and performance standards.
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