



Udo Dedekind

EMBEDDED & SOFTWARE ENGINEER

Pretoria, South Africa

083 283 3205

dedekindudo@gmail.com

I hold a degree in Electrical and Electronic Engineering and have grown into a role that bridges hardware and software. At Firmlogik, I work across the full stack — from embedded firmware and communications to servers, web portals, crew-facing interfaces, and automated testing. I enjoy solving the problems between these layers and seeing systems I've built operate reliably in the real world, knowing people depend on them.

START

Concept & specifications

BUILD

Electronics & firmware

CONNECT

Server & mobile network

USE

Screens, portal & apps

FINISH

Production & field support

EXPERIENCE

Embedded Software Engineer

JAN 2025 — PRESENT

Firmlogik (Pty) Ltd · Pretoria

- Took responsibility for the software development of a full interlocking security system for cash-in-transit vehicles, spanning embedded firmware, HMI touchscreens, access-control logic, and the control of doors, safes and immobilisers.
- Develop and maintain the fleet management platform, providing control rooms with real-time visibility of vehicle location, security status and system health, including remote vehicle security controls.
- Designed and implemented over-the-air update systems for field-deployed units.
- Developed automation bots to assist clients and internal staff, improving efficiency and streamlining repetitive tasks.
- Developed the supporting engineering tools and infrastructure, including technician software, hardware simulators, automated crew authorisation systems and production test rigs used to validate every unit before deployment.
- Administrator for the company's Linux servers: services, deployments, networking and automated backup/restore.

Final Year Project · North-West University, Potchefstroom

JAN — DEC 2024

Developed a remote fuel theft detection system capable of detecting tampering, motion, damage and theft.

Mentor Manager, Faculty Mentor Programme · North-West University, Potchefstroom

2024

Led the faculty programme supporting first-year engineering students through the move from school to university.

Engineering Vacation Work · FULS Engineering, Ermelo

NOV 2022 — JAN 2023

Solar plant design and earthing, distribution systems, mini-substations, grid balancing and hybrid designs

Accelerator Programme · North-West University, Potchefstroom

JUL — SEP 2021

Taking an idea to a market-ready product: design, prototyping, user experience, mobile development and intellectual property.

SKILLS

Firmware & embedded

C++ · C · Real-time, non-blocking cooperative threading · ARM Cortex-M & AVR microcontrollers · Touchscreen interfaces · Bootloaders · LTE modems & GPS · RS-232, RS-485, I²C, SPI, UART · Barcode scanners · RFID · Servos...

Server

Backend & frontend development · Automations · Backups · Security · Hosting · Samba · SQL · Docker · Nginx · Node.js · JavaScript, HTML & CSS · MQTT over TLS · WebSockets · REST APIs

Other

C# / .NET · Python · Git · Microsoft Office · 3D printing & CAD

Electrical engineering

Circuit design & analysis · Fault calculations · MATLAB & Simulink · DlgSILENT · LTspice · ATPDraw · Siemens NX · Fusion 360 · Oscilloscope

ALSO WORTH KNOWING

EDUCATION

BEng Electrical & Electronic Engineering
North-West University · 2020 — 2024

LANGUAGES

Afrikaans & English — fully bilingual

STRENGTHS

Shows up early, stays until it's fixed · Clear technical writing · Easy to work with, straight with clients · Comfortable with pressure · ALWAYS THE JOYFUL EMPLOYEE · Reads the datasheet properly before arguing about it · This is my passion and lucky for me, my career

REFERENCES

Available on request