Werner **Bisschoff**

Embedded Software Engineer

Cape Town, Western Cape, South Africa

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Summary

Adaptable and dedicated software engineer with a strong background in embedded and embedded linux systems. Proven proficiency in C++ and Python, with a curiousity to expand expertise in various disciplines. Passionate about continual learning and able to swiftly adapt to evolving project requirements. Keen to solve problems with an analytical and detail-oriented approach, ensuring high quality solutions.

Experience

FARO Africa — *Cape Town*

Full-Stack Software Engineer — *Aug 2024 – Nov 2025*

- Extended ERPNext using Python/JavaScript to improve workflows, pricing logic, and operational reporting (SQL).
- Built mobile features in Expo, including NFC (ISO 14443-4 APDUs) for e-paper price tags and card operations.
- Migrated internal Retool workflows to Expo, significantly improving performance and maintainability.
- Developed and maintained C# APIs supporting internal systems.
- Provisioned AWS infra with Pulumi and deployed services including Inngest and PayloadCMS.
- Diagnosed and resolved issues in a large existing ERPNext installation.
- Introduced LLM-assisted development workflows, improving debugging, code review speed, and internal developer productivity.

Ingenics Digital GmbH *(through ViVa Outsourcing)* — *Remote Work*

Embedded Software Engineer — *Mar 2023 – May 2024*

- Designed an event-driven finite state machine for an I2C-based embedded system using C++ and FreeRTOS
- Developed ESP32 applications using C/C++ and ESP-IDF
- Integrated a configurable low-energy BLE stack for device communication
- Built Python-based tooling for serial/BLE communication, including client-facing test executables
- Created Python hardware mocks for rapid iteration and early-stage testing
- Managed fast, reliable data interchange using a compact TinyFrame binary protocol
- Implemented asynchronous communication workflows with Python and Pytest
- Developed an active object within the QP Real-Time Embedded Framework (with QSPY) to simulate device behaviour

UMAN Technologies — *Century City, Cape Town*

Software Developer — *Mar 2021 – Dec 2022*

- Creating and maintaining Docker containers for development and CI/CD testing
- Implementing and testing new services using RPC based on the SOME/IP protocol, as well as using *perf* to reduce performance bottlenecks
- Implementing IPC/RPC in existing C++ programs and Python scripts using Cap'n Proto and pycapnp
- Implementing a node tree to expose process-related variables and function calls to the IPC interface
- Analysing TCP/UDP traffic with Wireshark
- Leading a small team using AGILE development practices, including onboarding and mentoring new software developers

Education

North-West University — *Potchefstroom*

B.Eng. in Computer and Electronic Engineering — *2020*

- Developing an Android app with Kotlin to emulate an ISO 14443 protocol-based NFC payment system
- Developing microcontroller logic with C and the STM32 system as well as utilizing STM32CubeMX
- Implementing a PID controller with an Arduino to control a DC motor's voltage and speed
- Cleaning and analysing data from large spreadsheets with Python and Pandas, utilizing linear regression, correlation and machine learning

Skills

Embedded C/C++ | ESP32 | ESP-IDF | FreeRTOS | NimBLE | Event-Driven Finite State Machines | QP RTOS

Web ERPNext | Django | REST API | ReactJS | JavaScript | TailwindCSS | ParcelJS | Netlify

Data MySQL | Python | Pandas | NumPy | Matplotlib | Jupyter Notebook

Tools Git | Docker | VSCode | Devcontainers | Homebrew | WSL2 | Linux | Ubuntu | Windows