

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 curiosity 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 – Now

- Architecting and implementing new business logic using the ERPNext / Frappe framework
- Adding front end functionality to existing ERPNext system using JavaScript while ensuring good user experience
- Setting up and creating ERPNext Python unit tests and adding to CI pipeline
- Generating business reports by querying the database with SQL

Ingenics Digital GmbH (through ViVa Outsourcing)

Remote Work

EMBEDDED SOFTWARE ENGINEER

Mar 2023 – May 2024

- Architecting an *event-driven finite state machine* for a I2C-based system using C++ and FreeRTOS
- Developing applications for an Espressif microcontroller using embedded C/C++ and ESP-IDF
- Utilizing a highly configurable BLE stack for communications in the ESP environment for low-energy data transmission
- Leveraging Python to manage serial and BLE communications for seamless device interaction; also creating executable programs for client-side testing, enabling application functionality verification
- Setting up mock implementations of hardware functionality using Python allowing for quick testing and development
- Managing specified data interchange through a lightweight, compact binary framing protocol (TinyFrame), ensuring fast data transfers
- Implementing asynchronous development practices over serial communication with Python and Pytest
- Implementing an *active object* in the QP Real-Time Embedded Framework with QSPY support to serve as device simulation

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

Expandrand

Remote Work

FREELANCE FULL STACK DEVELOPER

Nov 2020 – Dec 2020

- Architecting a full stack content management system to allow viewing and editing of client information and status, by leveraging Django and Django Rest Framework to create a REST API, and ReactJS to create a front end user interface

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