Werner **Bisschoff**

SOFTWARE ENGINEER

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Summary

Versatile Computer and Electronic Engineering graduate who is passionate about software technologies. Interested in building exciting and challenging products effectively and efficiently. Always willing to learn new technologies and to adapt to unfamiliar situations.

Experience

Ingenics Digital GmbH *(through ViVa Outsourcing)*   *Cape Town*

EMBEDDED SOFTWARE ENGINEER   *Mar 2023 - Present*

- Developed applications for an Espressif microcontroller using embedded C/C++ and ESP-IDF.
- Utilized a highly configurable BLE stack for communications in the ESP environment for low-energy data transmission
- Leveraged Python to manage serial and BLE communications for seamless device interaction; Python was also used to create executable programs for client-side testing, enabling application functionality verification
- Set up a mock implementation of hardware functionality using Python. This simulated environment allowed for quick testing and development without the need for physical hardware.
- Managed specified data interchange through a lightweight, compact binary framing protocol, ensuring fast and compact data transfers.
- Implemented asynchronous development practices using promises and event listeners.

UMAN Technologies   *Milnerton, Cape Town*

SOFTWARE DEVELOPER   *Mar 2021 - Dec 2022*

- *Docker* containers for development and CI/CD testing
- Implementing and testing new client 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 small software development team using *AGILE* development practices, including onboarding and mentoring new software developers

Expandrand   *Remote*

FREELANCE FULL STACK DEVELOPER   *Nov 2020 – Dec 2020*

- Architected 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

North-West University   *Potchefstroom*

JUNIOR LECTURER   *Feb 2020 – Dec 2020*

- Lectured *Python* and C++ programming for *Introduction to Programming* for first year IT students in both remote and in-person settings

Skills

Embedded	ESP32, ESP-IDF, FreeRTOS, NimBLE, Event-Driven FSM
Web Development	Django, REST API, ReactJS, JavaScript, TailwindCSS, ParcelJS
General Programming	C++, Python, Julia, Bash, Git, CMake, LaTeX
Platforms	Linux, Windows, WSL, Docker, VSCode Devcontainers
Languages	English, Afrikaans

Education

North-West University   *Potchefstroom*

B.ENG. IN COMPUTER AND ELECTRONIC ENGINEERING   *2020*

- Final year project included the development of an *Android* application to emulate an *NFC* payment system based on the *ISO 14443* protocol, the architecting of the communication protocol, and the design of an algorithm to parse and interpret byte packets
- Analysed data from large spreadsheets by use of *Python*, *Pandas*, and *Jupyter* notebook, including multi-processing, data cleaning, linear regression, correlation and basic implementation of machine learning with Sklearn
- Developed microcontroller logic with *C* and the *STM32* system as well as utilizing *STM32CubeMX* to generate code
- Implemented a PID controller with an *Arduino* to control a DC motor's voltage and speed