Kevin Nel

Electronic Engineer

Electronic engineering graduate with full-time experience on a small team focused on product design and consulting, a strong interest in software development, and a thirst for knowledge. Quick learner, always up for a challenge. Skilled in C/C++, Python, Rust, and Linux, with hands-on experience in embedded systems. My broad interests in technology combined with a foundation in engineering have helped me develop a unique perspective and a valuable skill set for learning and problem-solving.

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WORK EXPERIENCE

Applications Engineer
Seven Labs Technology

01/2024 - Present

Seven Labs *is a specialist electronics distributor and systems integrator.*

Achievements/Tasks

- **Smart Solar IoT Product Development:** Played a key role in the design and development of IoT solutions for geyser management, utilizing C/C++ on the ESP32 platform with PlatformIO and FreeRTOS. Contributed to the circuit design, PCB layout and firmware development, ensuring seamless cloud integration and real-time data monitoring.
- **PCB Design & Review:** Contributed to schematic design and PCB layout, ensuring design for manufacturing (DFM), cost optimizations, and compliance with relevant standards.
- **Embedded Product Integration:** Worked collaboratively to integrate embedded systems with backend software platforms, utilizing modern development techniques (REST APIs, WebSockets, UDP) to ensure smooth data communication between hardware and cloud-based systems.
- **Sales Support & Technical Assistance:** Provided support to the sales team by identifying equivalent and substitution parts, leveraging knowledge of electronic components and systems to facilitate smooth project execution and customer satisfaction.

Internship
IoT.nxt

01/2022 - 02/2022

IoT.nxt *build IoT solutions that scale elegantly and solve real-world problems.*

Achievements/Tasks

- Creation and updating of documentation for in-development and existing electronics products, demonstrating attention to detail and organization skills.
- Porting of a new micro-controller to mbedOS software platform, showcasing technical acumen and problem-solving abilities.
- Gained experience in the functioning of an Agile project management environment, collaborating with cross-functional teams to achieve project goals.

EDUCATION

Beng Electronic Engineering
University of Pretoria

Graduated: 2023

Relevant Courses

- Final Year Project: Real time digital emulation of a vacuum tube guitar amplifier on an embedded Linux platform (C++).
- Control systems and Automation.
- Stochastic Communication Systems.
- Digital Systems & Logic, Microprocessors, and Computer Architecture (FPGAs, VHDL).
- Digital Signal Processing with STM32 Platform (C).
- Analogue Electronics and Design.

SKILLS

Programming · OOP · Scripting/Automation · Debugging · C/C++ · Python · Rust · Linux · Git · VSCode · Vim · KiCAD PCB Software · 3D CAD (FreeCad and Onshape) · ESP32 · FreeRTOS · REST API's · Websockets · UDP · Design for manufacturing (DFM) · Problem Solving · Communication

PERSONAL PROJECTS

FilterForge

- FilterForge is a command line component value calculator for scaling and offset amplifier circuits and op amp low pass filters, using Texas Instruments application notes, written in Rust.

Mimic40

- Mimic40 is a tiny 40% ortho-linear mechanical keyboard PCB designed in KiCAD to use the Raspberry Pi Pico micro-controller

ACHIEVEMENTS

Honours in Leadership (2016)
Holistic youth development initiative entailing a series of programs and activities aimed at developing leadership ability and personal growth.

Honours in Academics (2016)
above 80% average for all 4 years leading up to matric

Prefect on the Student Executive Council (2016)
Facilitated outreach programs to underprivileged communities, as well as performed other administrative prefect duties and events facilitation

INTERESTS

Linux · 3D printing · Programming · Open Source · Music production · Guitar · Mechanical keyboards · PC Gaming