Newton Kelvin Ollengo

Address: Bern, Switzerland
Phone: +41767312268
Email: Newtonkelvin75@gmail.com
LinkedIn: linkedin.com/in/newtonkelvin
GitHub: github.com/Newton001

Personal Profile

Dedicated and highly skilled Embedded Software Engineer with over 4 years of experience developing optimized firmware and software solutions for embedded systems. Proficient in C, C++, and with a growing expertise in Rust for firmware development. Adept at creating robust and scalable embedded solutions for sensor applications and motor control systems. Strong expertise in Clean Code principles, real-time systems, and agile methodologies. Passionate about contributing to innovative projects and continuous learning in the embedded systems domain.

Education

Master of Science in Biomedical Engineering
University of Bern, May 2024
Key Courses: Embedded Systems, Real-Time Systems, Medical Robotics, Microsystems Engineering

Bachelor of Technology in Electrical and Electronics Engineering
Dedan Kimathi University of Technology, May 2017 - December 2021
First Class Honors

Technical Skills

- **Programming Languages:** C, C++, Python (Advanced) ,Rust (Intermediate)
- **Embedded Software Development:** Firmware Development, Bare-metal programming, Real-Time Operating Systems (RTOS), Microcontroller programming (STM32, TI CC2650), Embedded Linux, Zephyr
- **Communication Protocols:** SPI, I2C, USART, CAN, USB, BLE
- **Development Tools:** Keil, GCC, IAR Embedded Workbench, Altium, KiCad, Visual Studio Code, Git
- **Embedded Applications:** Secure Bootloaders, Signed Keys, Advanced Motor Control, Digital Signal Processing (DSP)
- **Software Development Practices:** Clean Code, CI/CD, Unit Testing, Integration Testing, Agile Methodologies

Professional Experience

Senior Embedded Software Engineer, SurgeonsLab AG
January 2023 - Present, Bern, Switzerland

- Led firmware development for embedded medical devices using C++ and Rust, ensuring robust real-time performance.

- Developed multi-threaded embedded applications for sensor data processing and communication (I2C, SPI, USB).
- Designed secure bootloaders with cryptographic key implementation for firmware security.
- Implemented automated testing frameworks to improve software quality and efficiency.
- Collaborated in an Agile environment, working closely with cross-functional teams to deliver solutions within strict timelines.

Junior Embedded Software Engineer, SurgeonsLab (OPC) Pvt Limited
December 2021 - December 2022, India

- Developed and maintained firmware for healthcare devices, focusing on high-performance and safety-critical requirements.
- Integrated hardware interfaces and optimized real-time performance using embedded C.
- Contributed to DSP algorithms for motor control and sensor fusion applications.

Software Engineer Intern, ARTORG Center for Biomedical Engineering Research
April 2021 - November 2021, Bern, Switzerland

- Collaborated on the development of embedded systems software used in experimental medical devices.
- Assisted in sensor integration and system optimization for real-time data acquisition.
- Conducted performance testing and debugging of firmware components.

Junior Embedded Software Engineer, ICT Authority
April 2021 - November 2021, Kenya

- Developed firmware for government-sponsored educational devices, focusing on optimization and system reliability.
- Ensured smooth integration of communication protocols, enhancing data transmission performance.

Projects

RFID Gym Member Management System

- Developed an RFID-based gym management system using STM32F446RE, MFRC522 RFID module, SPI-based LCD, and SD card storage.
- Designed firmware for card acceptance/rejection with a buzzer using DAC.
- Implemented multi-threading to minimize polling and improve responsiveness.

Medical Robotics Sensor Fusion System

- Developed embedded software to fuse IMU and optical sensor data for surgical robotics.
- Optimized real-time processing using C++ and implemented safety protocols.

Additional Skills

- Strong problem-solving abilities in embedded firmware engineering, with a focus on high-quality, maintainable code.
- Experimental mindset with an interest in exploring new technologies such as Rust and IoT security frameworks.
- Excellent communication and mentoring skills; experienced in leading collaborative development efforts.
- Fluent in English and Kiswahili; basic proficiency in German.

References

References Available Upon Request