Sina Tahbaz

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Skills

- **Languages:** C, C++, Rust, Python, Swift, Kotlin, Dart, MATLAB
- **Software**: Nordic nRF Connect SDK, Altium, KiCad, Keil uvision
- **Platforms**: STM32 (CMSIS Bare metal and Cube HAL), nRF52 (Zephyr RTOS), ESP32, AVR (Arduino)
- **General**: Soldering (0402 SMD), Test and debug (Jlink, Logic Analyzer, Oscilloscope, Multimeter), Prototyping (CAD Design, PCB, Assembly), 3D Printing

Experience

Embedded Systems Engineer – Fibra Inc – Toronto, ON - Full-Time   Feb 2024 – Present
- Implemented multi-threaded firmware using Zephyr RTOS and C
- Ensured design adherence to IEC 60601 medical device safety standards
- Created modular device drivers following structured programming principles
- Reduced product size by 50% integrating a complete BMS and a 6 layer PCB
- Developed iOS and Android applications to facilitate user data collection
- Utilized Git for precise code change management throughout the project lifecycle

Hardware Engineer – Torion Plasma Corporation – Barrie, ON - Contract Project   Oct 2022 – Feb 2023
- Architected and implemented real-time embedded C++ firmware for precise motor control
- Embedded a TMC motion controller IC, achieving a positional accuracy of ± 0.05 mm
- Utilized a rotary optical encoder and a 0.9 degree 400 step NEMA17 motor to achieve high precision
- Implemented a compensation algorithm to account for any step losses with an accuracy of 0.2 degrees

Teaching Assistant - York University - Toronto, ON   Jan 2021 - Jan 2024
- Provided guidance and support to students in programming courses as a lab assistant
- Fostered a collaborative learning environment that encouraged student success

Education

York University - MASc. in Electrical and Computer Engineering   Jan 2021 – Nov 2023
- Fabricated samples of 2D materials using mechanical exfoliation of the crystal flakes
- Deposited a layer of Aluminum on top of the samples and measured them using FDTR
- Thesis:Investigating thermal properties of 2D transition metal dichalcogenides (TMD)s using frequency domain thermoreflectance (FDTR)

Shahid Beheshti University - BSc. in Electrical Engineering   Jan 2016 – Dec 2020

Publications

Extreme in-plane thermal conductivity anisotropy in Rhenium-based dichalcogenides.
- Sina Tahbaz, Simone Pisana. (2024). Journal of Physics: Materials, 7(1), 015014. 10.1088/2515-7639/ad1d8b