Akshat Sharma

519-992-7451| akshat@akshatsharma.ca | LinkedIn | GitHub | akshatsharma.ca

EXPERIENCE

Software Developer
Tessonics

Apr 2024 – Present

Windsor, ON

- Built a **C++** PLC simulator that mirrors real production traffic, accelerating integration tests for the **RIWA** platform.
- Engineered a real-time Hall-effect current-detection algorithm in **C++**, achieving <10 ms end-to-end latency.
- Added rule-based weld-analysis to the web backend in **Go**, letting customers drop in custom quality-control logic.
- Authored backward-compatible 32-bit **C++** DLLs that expose a drop-in API, bridging legacy software to a modern **C++** inference server via WebSocket and delivering real-time deep-learning predictions with no code rewrites.
- Built a Python-based Debian packaging pipeline and a self-hosted **GitHub Actions** runner, fully automating CI/CD and release distribution for the monorepo.
- Designed an **ImGui** GUI for effortless JSON configuration, cutting technician setup time and reducing deployment errors across customer sites.
- Automated cleaning, analysis, and visualization of **EEG** & Hypnogram time-series data using **NumPy** and **matplotlib**.
- Developed STM32 firmware (**C**) that integrates the **MCP4725** DAC and **RX8900** RTC for the SONYA sleep wearable.
- Implemented a **Bluetooth Low Energy (BLE)** GATT service on the STM32 that lets users remotely adjust stimulation intensity and toggle operating modes on the sleep-wearable in real time.
- Optimized **ISM330DHCX** IMU data capture via FIFO and I^{2}C, ensuring synchronized, real-time motion streams for onboard processing.

Undergraduate Research Assistant
Institute of Diagnostic Imaging Research

Jan 2023 – Apr 2024

Windsor, ON

- Conducted interdisciplinary research in deep learning (AutoEncoders, GANs, U-Nets) for creation of Synthetic Welds using Generative Models for Non-Destructive Ultrasound Evaluation.
- Collaborated on deep learning model development in **TensorFlow**; curated datasets, and developed Python scripts (using **OpenCV**, **NumPy**, **matplotlib**) for ultrasound image analysis in resistance spot weld evaluation.

TECHNICAL SKILLS

Languages: C | C++ | Python | Java | Go | C# | SQL

ML & Vision: TensorFlow | PyTorch | Keras | OpenCV | NumPy | SciKit-Learn | Matplotlib

DevOps: Git | Docker | GitHub Actions | CMake | Conan | SQLite | MySQL

Embedded / HW: STM32CubeIDE | FreeRTOS | I^{2}C | SPI | Arduino

EDUCATION

University of Windsor
Bachelor of Computer Science Honours

Jan 2021 – Apr 2024

Windsor, ON

- *Specialization in Artificial Intelligence, Minor in Mathematics*

VOLUNTEER & AWARDS

- **Event Coordinator, Computer Science Society** — 2023 – 2024
  Organized events that served 100+ students each term and streamlined logistics to improve attendee experience.

- **Dean's Honour Roll** — 2021 – 2024
  University of Windsor