Sion Gang

647-657-2632 | s2gang@uwaterloo.ca | personal-website | github.com/siongang | linkedin.com/in/sion

Technical Skills

Languages: Python, TypeScript, C, C++, Java, JavaScript, SQL, Tailwind CSS
Frameworks/Tools: Node.js, React.js, Next.js, FastAPI, AWS, Flask, Django, Git, LangChain, Selenium
Libraries: Pytorch, TensorFlow, Scikit-learn, Pandas, NumPy, SciPy, OpenCV, OpenAI

Experience

Backend Automation Engineer
Jan 2025 – April 2025
Supernova MGU — *Toronto, ON*

- Developed the AI Agents below with **Python**, **LangChain**, and **OpenAI**, deployed via **Docker**, **Streamlit**, and **Railway**
- Created a Research AI Agent that discovers social media trends and scrapes relavent posts using **BrightData** APIs
- **Increased social media engagement by 80%** by building a Strategy AI Agent that automates brand marketing through research-driven post generation and scheduling, with customizable messaging, tone, and brand alignment.
- **Reduced error resolution time by 50%** by building an AI Agent to monitor **Azure API** and codebase errors, automatically log issues to **Airtable**, categorize them, and generate reports for proactive debugging.

Software Developer
Oct 2022 – June 2024
Metropolis — *Toronto, ON*

- Contributed to maintaining the Official School Website with **React**, **Vite**, and **TypeScript** for 1200+ students
- Increased monthly website traffic by **35%** by developing and deploying interactive JavaScript games

Firmware Developer
Sept 2024 – Dec 2024
University of Waterloo Orbital — *Waterloo, ON*

- Integrated **LM75BD** temperature sensor with **I2C**, utilizing **FreeRTOS** for task management and data handling
- Designed a thermal management system, ensuring optimal temperature regulation and preventing overheating.
- Implemented an OS interrupt handler to execute over-temperature shutdowns, ensuring device safety

Projects

Wearable AI Fall Detection Device | ⦿ | *C, TensorFlow, STM32, SolidWorks*
Sept 2024 – Dec 2024

- Trained a **TensorFlow** neural network on fall data, **achieving 96% accuracy** through rigorous data preprocessing
- Calibrated real-time data collection from LSM9DS1 IMU with **C** and sensor fusion, **reducing false alerts by 30%**
- Developed circuit schematics and 3D-modeled the device housing using **SolidWorks** to ensure durability

ML Music Accompaniment Composer | ⦿ | *Python, Jupyter, Mathplotlib, Pandas*
Aug 2023 - Sept 2023

- Trained scikit-learn models to generate musical accompaniment based on user-provided melodies
- **Scraped 200+ MusicXml files** from Musescore.com to create a robust training dataset
- Optimized data preprocessing pipelines by data categorization automation, **improving model accuracy by 160%**.

Dynamic Midi Visualization Application [Demo] | *Python, PySide6, Pygame*
June 2024 – Present

- Built a **full-stack** application that analyzes the notes of a song and generates dynamic visualizations
- Developed a user-friendly GUI with **PySide6**, enabling intuitive interaction and customization of visualizations
- **Optimized the visual generator to process 400 notes/min,** improving performance by **260%**

Charisma Coaching AI - doubleURizz | ⦿ | *Python, Flask, DeepFace, OpenAI*
Sept 2023 – Oct 2023

- Created a **ChatGPT-3.5 powered assistant** to provide personalized training for improving user's charisma
- Developed a web application with **Flask** that enables real-time interaction with the bot, offering actionable insights
- Integrated **DeepFace** to perform real-time facial expression analysis and sentiment detection using **OpenCV**
- Implemented **speech recognition** for seamless conversation, enhancing user engagement and accessibility

Education

University of Waterloo
Waterloo, ON
Bachelor of Applied Science in Computer Engineering — *Sept 2024 – Present*