JOSEPH MITCHELL

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SKILLS

LANGUAGES: C, C++, Python, Matlab, JavaScript, TypeScript, React.js, HTML, CSS
DATA TOOLS: NumPy, SciPy, pandas, Keras, TensorFlow
TECHNOLOGIES: Linux, Mac, Git, SolidWorks, Postman, Unity

WORK EXPERIENCE

SDK ENGINEERING INTERN *Ottawa, ON*
Infinera *May 2023 – August 2023*

- Redesigned command messaging system, introducing **asynchronous communication** capabilities across microcontrollers through **multithreading**.
- Engineered comprehensive parent class, facilitating **inheritance** for numerous subclasses, **minimizing code redundancy** by consolidating **36 files down to 18**.
- Thoroughly documented and tested **C++** projects to ensure seamless handovers and ease of reference for future development teams.

FIRMWARE ENGINEERING INTERN *St. John's, NL*
BreatheSuite *August 2022 – December 2022*

- Applied knowledge in **digital signal processing** including Fourier transforms, filtering, and noise reduction to improve inhalation classification model by **6-12%**.
- Ported functions from Pythons Librosa library to the **C programming language** and implemented them in real time operating system.

PROJECT PLANNER *Toronto, ON*
PuraJuniper *April 2022 – September 2022*

- Pitched business opportunity for deploying app suite throughout Newfoundland and Labrador health authorities.
- Facilitated meetings between PuraJuniper executives and local industry professionals leading to the development of a new major project.

JUNIOR SOFTWARE DEVELOPER *Toronto, ON*
PuraJuniper *January 2022 – April 2022*

- Developed **React-based applications** through agile methodology to create and display clinical practice guidelines complying to FHIR standards and guidelines.
- Conducted multiple meetings to pitch new **UI mock-ups** created in Figma.
- Represented JuniperCDS at the March 2022 Infoway Projectathon, **completing over 8 tests** related to **interoperability** and **exchange of health data** within Canada.

PROJECTS

Modelling Pupillary Light Reflex to Detect Intoxication *March 2022 – April 2022*

- Researched and implemented state-space model of neural delay caused by intoxication.
- Integrated neural delay into larger state-space system modeling pupillary light reflex.

PARKINSON'S DISEASE DETECTOR *Jan 2021*

- Implemented and displayed a Parkinson's Disease Detector using Jupyter Notebook.
- Achieved classification accuracy of **93.8%**.

EDUCATION

UNIVERSITY OF WATERLOO *Waterloo, ON*
BASc. Biomedical Engineering *Sept 2020 – Apr 2025*
Cumulative GPA: **90.58%**
Relevant Coursework: **Data Structures and Algorithms | Linear Signals and Systems | Digital Systems | Circuits, Instrumentation, and Measurements | Computer-Aided Design**