BRASEN XU

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EDUCATION

University of Waterloo, Bachelor of Computer Science (Co-op) Sep 2022 - Apr 2026
3.8 GPA, 87.5 CAV

EXPERIENCE

Software Engineer September 2024 - December 2024
Onsemi *Waterloo, ON*

- Developed and implemented new features for the user interfaces of Onsemi chips using the **QT framework** and **C++**, enhancing user experience and functionality.
- Upgraded software architecture to use **Electron** and **React**, modernizing the GUI and resulting in a **15% increase in development efficiency**.
- Migrated key chip software from **Python 2 to Python 3**, improving performance and ensuring compatibility with modern frameworks and libraries.

Software Engineer Co-op January 2024 - April 2024
Siemens *Concord, ON*

- Developed and maintained a **C# Windows Presentation Foundation** receiving floor display application, facilitating real-time tracking and movement of parts and enhancing operational efficiency. Integrated seamlessly with **SQL** database for data management and retrieval.
- Improved existing certification software by adding more efficient search/filter functions, allowing floor managers to search for and grant certifications for over **180 operators**.
- Built a **Windows Form application** following the **Agile** method to streamline the assembly process of PCBAs, enhancing operator efficiency and accuracy across **11 product lines**.

Technology Intern May 2023 - August 2023
Insurance Bureau of Canada *Toronto, ON*

- Planned and executed **software unit testing** for multiple projects, ensuring adherence to quality standards.
- Created automated test scripts for manual test cases using **Selenium** and **Katalon Studio**, successfully boosting efficiency and reducing overall testing times by **over 95% (20x faster than manual testing)**.

PROJECTS

MotiSpectra - ConUHacks Overall 2nd Place

- Developed a real-time emotion analysis software using **Next.js** and **Python** to seamlessly integrate with virtual call platforms (Zoom, Google Meet, MS Teams).
- Implemented intuitive user interfaces with dynamic radar graphs and rolling averages for visualizing emotion and attentiveness data.
- Built and trained ML models from scratch using the **FER-2013** dataset for emotion and attentiveness recognition. Fine-tuned the **YuNet** face detection model, ensuring an accuracy rate of **97%**.

NarratorRL - CoHere Challenge 1st Place, MetHacks Overall 2nd Place

- Developed a **mobile app** to address vision impairment using **React Native**, **Tesseract OCR**, and **Django** that recognizes text in images and narrates it aloud using **Expo**'s speech synthesis service.
- Verified legibility of text and summarized text into keywords using custom-trained **Cohere NLP** models, implementing **NLP text pre-processing** strategies to increase model effectiveness.
- Applied the **Cohere API** to implement advanced features such as text language detection and summarization.

SKILLS

Languages	C#, JavaScript, Python, TypeScript, Java, C/C++, SQL, HTML, CSS, Bash, R
Tools	Git, MS SQL Server, .NET, MongoDB, Microsoft Azure, Linux, AWS, Jira
Libraries	React, React Native, Node, Selenium, OpenCV, PyTorch, Tesseract