

LAWRENCE TSAI

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HIGHLIGHTS OF QUALIFICATION

- SWE Intern at **Capital One** (NYC, Summer 2023) **seeking New Grad SWE Roles** for Jan/Feb 2024 (Graduating in **Dec 2023**)
- Light-hearted problem solver with full stack industry/extracurricular experience and proficiency in **Python, Java, and API Development**
- **University of Toronto Math & Physics** student (previously studying Chemistry) who is expanding knowledge in **ML & Finance**

EDUCATION

University of Toronto - Trinity College <i>HBSc Candidate- Math (Major), Physics (Major), Computer Science (Minor), 3.95 CS GPA</i>	September 2020 - December 2023 Toronto, ON, Canada
Council Rock High School North <i>Diploma with Distinguished Honours in Gifted Program GPA: 4.283/4.0 SAT: 1580/1600 ACT: 35/36</i>	August 2016 - June 2020 Newtown, PA, USA

PROFESSIONAL/RELEVANT EXPERIENCE

Capital One <i>Software Engineer Intern</i>	June 2023 - Present Manhattan, New York City, NY, USA
<ul style="list-style-type: none">· On the Payments Intelligence Team working on migrating transaction cache data from Redis to DynamoDB to save \$100,000+ annually· Redesigning & Implementing the cache for millisecond(s) latency for our ML model for over 180 billion transactions annually	
Cognitive Neuroscience & Sensorimotor Integration Laboratory (University of Toronto) <i>ML Research Assistant</i>	May 2023 - Present Toronto, ON Canada
<ul style="list-style-type: none">· Researching the Dorsal & Ventral Streams for human grasp point determination & object recognition with explainable CNNs & EEG data· Hypothesis: "Differences between the two streams are due to differences in how the two streams are optimized (not by different initializations)"	
University of Toronto Biology Information Technology Department <i>Information Technology Support Assistant</i>	September 2022 - Present Toronto, ON Canada
<ul style="list-style-type: none">· Working with Linux environments, TCP/IP Protocols, & Bash scripting to create embedded systems for the department· Maintaining department hardware and conducting Penetration Tests to find vulnerabilities in for 3 biological science departments	
Promise Robotics <i>Software Engineer Intern</i>	May 2022 - August 2022 Edmonton, AB, Canada
<ul style="list-style-type: none">· 4 month internship in software (Python, Django, React, Node.js, Docker, Databases, Robotics, CAD); https://promisrobotics.com/· Top intern contributor in creating algorithms for robotic preprocessing/sequencing with applied Physics and ML for automated construction· Developed and reviewed full-stack integrations with databases, security, & 3D manipulation (Open CASCADE, Ifc, Quaternions)	
Blue Sky Solar Racing <i>Senior Strategy Engineer</i>	May 2021 - Present Toronto, ON, Canada
<ul style="list-style-type: none">· Optimized the construction, telemetry, & performance of our solar car for the American and World Solar Competition along with fabrication· Conducted research on the implementation of bifacial solar cells and created simulations of cell output from weather and geographic data· Created a parallel computed simulation (MATLAB, Python, Ansys, CAD) in a StratApp for future gens; http://blueskysolar.utoronto.ca/	
University of Toronto Aerospace Team <i>Space Systems Optics Team Member</i>	May 2022 - Present Toronto, ON, Canada
<ul style="list-style-type: none">· Development of a hyperspectral imaging CubeSat to measure anthropogenic gas emissions across Ontario, Canada. Set to launch in 2025.· Numerical analysis (Python) and R&D for optical components (grisms and holographic gratings); Github: https://github.com/spacesys-finch· Leading a team to design test plans for the optical bench (imaging, components, MTF) for the satellite; https://www.utat.ca/space-systems	

PROJECTS

Quick Ocular Movements Detection	July 2022-August 2022
<ul style="list-style-type: none">· A webcam screening tool to detect strabismus (eye misalignment) for Dr. Etienne Benard-Seguin and Jeremy Moreau (University of Calgary)· Used Python, OpenCV, MediaPipe, React, Node.js, CSS, HTML, Figma to give results at 4 mm tolerance at 95% confidence· Conducted medical research and pitched to Neurotech professionals; Github: https://github.com/lt77777/Quick-Ocular-Movements-Detection	
Amigos Friend Making Webapp	September 2021-December 2021
<ul style="list-style-type: none">· A webapp built using Java, Spring Framework, Javascript, CSS, HTML, Figma to find matches in a database of potential friends· Implemented a weighted matching algorithm using user metadata to be used through Thymeleaf generated webpages deployed on Azure· Designed the entire software model and frontend design to achieve an A in the course; Github: https://github.com/lt77777/Amigos-App	

SKILLS

Software Skills	Python, Java, C, AWS, Databases, Git, Bash, MATLAB, Django, Docker, Linux, Figma
Certifications	Bloomberg Market Concepts, Self Driving Cars 4-Course Specialization by the University of Toronto (in progress)