

Aspen Erlandsson

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EDUCATION

Bachelor of Applied Science and Engineering in Engineering Science + PEY Co-op

University of Toronto | Toronto, ON

Sep. 2022 - Jun. 2027

(expected)

| Sample Courses

- Computer Algorithms and Data Structures
- Vector Calculus & Fluid Mechanics
- Thermodynamics and Heat Transfer
- Digital and Computer Systems

High School Diploma

Gulf Island's Secondary School | Salt Spring Island, BC

Sep. 2018 - Jun. 2022

SKILLS

Technical

- Highly Proficient in Python and C/C++
- Prototyping, Assembling, and Programming Electronics
- Strong Proficiency in Calculus and Linear Algebra
- Data Analysis: Gathering, Filtering, and Formatting Data
- Detailed Note Taking and Technical Writing

Professional

- Team & Project Management
- Professional Communication (Verbal and Written)
- Time Management and Organizational Skills
- Strong Research, Analytical, and Problem-Solving Skills
- Adaptability and Willingness to Learn

WORK EXPERIENCE

Bartender

Village Genius Pub | Toronto, ON

Jul. 2023 - Present

- Provided professional service to patrons in a pub with a capacity of 70 people, creating and delivering beverages promptly
- Handled customer inquiries and administered payments through a POS system, ensuring smooth operation of the establishment
- Supported staff team with a variety of general duties, balancing responsibilities during busy periods to improve customer and staff contentment

Scripting and Data Analysis Consultant

Freelance | Remote, Online

Nov. 2020 - Aug. 2022

- Worked with clients to understand their requirements and objectives, successfully completing 2 freelance contracts
- Designed and programmed Python scripts for web scraping, data formatting, and data analysis, successfully meeting client requirements
- Implemented multi-threading and proxy connections to achieve a ~12x improvement in performance compared to single threading, to meet the large data gathering requirements set by clients
- Iteratively refined scripts based on client feedback to ensure satisfaction

Retail Salesperson

Salt Spring Island Cheese | Salt Spring Island, BC

Mar. 2018 - Aug. 2022

- Provided cheese samples and descriptions, answered inquiries, and processed transactions using a POS to ensure customer satisfaction
- Assumed a leadership position in the last year, coaching new staff and handling disputes in the absence of a manager to ensure smooth and effective operation of the establishment
- Managed daily staff task distribution, scheduling and synchronization, while maintaining previous responsibilities, to improve customer and worker satisfaction

EXTRA-CURRICULAR EXPERIENCE

Firmware Programmer

University of Toronto Aerospace Team | Toronto, ON

Sep. 2022 - Aug. 2023

- Collaborated with 8 other subteams working on a hyperspectral imaging satellite intended demonstrate the viability of the first Volume Phase Holographic (VPH) grism in a small form-factor, and provide a proof of concept for crop residue mapping
- Designed firmware testing procedures and standards for a subteam of 11 students to improve the reliability and safety of firmware running on the satellite
- Developed and integrated the battery management system (BMS) driver with a realtime operating system (FreeRTOS) to ensure safe battery charging and discharging behavior, while not interfering with other mission software priorities

Academic Tutor

Gulf Islands Secondary School | Salt Spring Island, BC

Jan. 2023 - Jun. 2023

- Provided mathematics tutoring in lower grade classes at my high school, assisting 20+ individuals over the course of a semester to improve their understanding class material
- Developed and implemented personalized learning strategies for each student consistent with their accessibility needs and preferences, leading to an improvement in their mathematics grades and enhanced problem-solving skills
- Stepped in to lead and teach entire class sessions effectively during teacher absences, ensuring continuity in education and comprehensively covering new mathematical concepts, which contributed positively to student learning outcomes

PROJECTS

Student Designer & Project Lead

Automatic Cat Trap and Messaging System | Toronto, ON

Jan. 2023 - Apr. 2023

- As part of an engineering design class my team worked closely with stakeholders from the Annex Cat Rescue organization to understand their needs and ensure our design aligned with their requirements and preferences
- Managed project deadlines and team-member task distribution to ensure timely completion of project objectives in line with stakeholder expectations and available resources.
- Engineered a fully automated cat trap with a 4G communication module, providing real-time alerts to trappers upon successful cat capture and enhancing trapping efficiency
- Designed and produced a fully functioning prototype within our team's \$500 budget and 6 week time constraint, resulting in a successful demonstrating it to our stakeholders that was received with approval

Python Developer & Data Analyst

Predictive Market Price Modeling using Machine Learning | Toronto, ON

Dec. 2022 - Sep. 2023

- Conducted a comprehensive study of machine learning models for time series classification and forecasting, including Dense, CNNs, Transformers, and LSTMs, employing Python and TensorFlow to forecast market price movements
- Engaged in extensive data collection through APIs and data preprocessing resulting in a large 6.2GB high quality data-set for the purpose of training ML models
- Continuously developed and refined of algorithms evidenced by over 200 commits on GitHub over nearly a year, resulting in improved predictive accuracy under varied market conditions
- Used Python to apply existing and novel quantitative trading strategies based on robust mathematical and statistical analysis resulting in a predictive accuracy of 61% on unseen data
- Created a custom web integration library to test in a real-world trading environment through an online broker, resulting in a confirmation of of the predictive accuracy seen during testing

Student Designer & C++ Developer

Structural Engineering Design Software | Toronto, ON

Oct. 2022 - Nov. 2022

- Developed a 6000 line C++ desktop application to streamline the design process of optimal bridge structures for a class engineering competition at U of T, resulting in improved design quality and workflow efficiency for my team
- Designed and implemented a cross-platform compatible user interface, allowing easy collaboration between team-members
- Applied software to rapidly iterate designs consistent with our team's specific requirements, resulting in placing 5th out of 100 competing teams

Video Creator

Educational YouTube Channels | Online

Jul. 2017 - Aug. 2023

- Created and managed two educational YouTube channels, one dedicated to C++ programming and the other to the technical aspects of 3D animation, providing in-depth tutorials and insights to assist learners in these fields.
- Planned and executed all aspects of video production, including filming, editing, and technical enhancements, ensuring high-quality content delivery and engaging visual presentations for complex C++ and 3D animation topics.
- Effectively integrated feedback from viewers to improve quality, growing my audience to a combined 1.3 million views across all educational videos uploaded