Amanda Shum

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PROFESSIONAL SUMMARY

Machine Learning Engineer with hands-on experience in **Reinforcement Learning, Computer Vision, and workflow automation**. Developed **CNN classifiers in TensorFlow and PyTorch**, and applied **data-driven strategies** to optimize business operations. **Led automation initiatives** that saw **25% growth in property rental bookings** and **75% workload reduction** across **10,000+ inquiries** through **Google Apps Script**. Proficient in **Python, Deep Learning, Applied AI, and ML Engineering**, with a focus on delivering practical, real-world solutions.

EDUCATION

Simon Fraser University **Burnaby, BC**
Master of Professional Computer Science (Visual Computing) *Expected Graduation Date: June 2027*

Queen's University **Kingston, ON**
Bachelor of Computing (Honours), Artificial Intelligence Specialization *Graduation Date: June 2025*

WORK EXPERIENCE

Kingston Student Housing Co-operative **Kingston, ON**
Vice President *2021-2025*

- Served as Managing Director overseeing daily operations, HR, facilities, and member services for 21 residential properties, ensuring compliance with safety and regulatory standards.
- Provided strategic leadership and stakeholder management to the Board of Directors, overseeing budgeting, policy implementation, organizational planning, and revenue generating initiatives.
- Led organizational projects including software transitions, and process improvements to improve quality of customer service and "co-op culture".
- Increased property rental booking reservations by 25% by analyzing customer demographics, optimizing seasonal marketing and room allocation strategies.
- Automated workflows with Google Workspace and Google Apps Script, reducing administrative workload by 75%, improving data processing and response time within 24 hours for 10,000+ inquiries.

Queen's University **Kingston, ON**
Teaching Assistant *Jan 2023-Apr 2025*

- Supported courses including Database Management Systems, Computer Architecture, and Elements of Computer Science.
- Guided students in SQL queries, relational database design, Python programming fundamentals, and problem-solving techniques.
- Provided academic support through one-on-one assistance, clarified course concepts for undergraduate students, and facilitated discussions in the course forum.
- Assisted professors with grading assignments, managed course materials, and delivered tutorials.

Queen's University **Kingston, ON**
Information Technology Assistant *2024*

- Designed and implemented SharePoint and Microsoft Teams sites by auditing legacy content, meeting organizational requirements.
- Assisted with the migration of existing content to new platforms, ensuring completeness, functionality, user accessibility in the new environment.
- Collaborated with stakeholders to ensure content retention, optimize navigation, and improve knowledge-sharing workflows.

PROJECTS

KSHC Mailer and Workflow Automation System — Ongoing (2024-2025)

- Designed and deployed a **custom automation system** for the Kingston Student Housing Cooperative using *Google Apps Script*, *Google Sheets*, and *HTML/JavaScript*. Automated core business workflows including email communication, booking management and member applications, with integrated generation of confirmation letters and rental agreements. Designed system architecture, user interface components, and role-based dashboards to improve data organization, approval processes, and operational efficiency.

Accessibility Chrome Extension — Sept. 2025

- Developed a Chrome extension to enhance digital accessibility for user with reading difficulties. Utilized ElevenLabs' *text-to-speech API* to generate voice narration and synchronized text highlighting. Built and tested using *Chrome Developer Tools*, implementing features for multiple voice selection, and interactive UI elements in *JavaScript* and *HTML/CSS*.

Gridworld Coverage — Jan-Apr 2025

- Built and trained RL agent using *Stable Baselines3 (DQN, A2C, PyTorch)* in custom Gridworld; experimented with reward function design and observation space configurations to optimize area coverage; achieved **85% coverage success**.

Fruit Ripeness Detection — Sept-Dec 2024

- Built two-stage deep-learning model using *TensorFlow, NumPy, Python, and Convolutional Neural Network architecture* to classify and predict the ripeness of various fruit types. The model achieves a **96% success rate** of identifying fruit classes by training a primary CNN model that identifies the fruit and then trains specialized sub-CNN models, where each sub-model is responsible for detecting the ripeness of each fruit class.

The Treasure Hunter — Feb. 2024

- Used *Planning Domain Definition Language (PDDL)* to design a model solution that 'plans a clear path to treasure' using facts and constraints outlined in a domain file.

The Pentagram — Jan-Apr 2023

- Designed a point and click game using in *Unity and C#*; created original assets and audio from *GarageBand*, with a focus on UI/UX.

SKILLS

Programming Languages: Python, C, JavaScript, C++, HTML, PHP, SQL

Frameworks/Libraries: PyTorch, Tensorflow, OpenCV, NumPy, pandas, matplotlib, Stable Baselines3

Tools & Platforms: Microsoft Office, Google Workspace, Google Apps Script, Unity, SharePoint, Microsoft Teams, Canva, OnShape, AnyDesk, Visual Studio Code

Core Competencies: Computer Vision, Image Processing, Machine Learning, Reinforcement Learning, Deep Learning (Convolutional Neural Networks, Object Detection, Generative AI), Autonomous Driving, Stakeholder Management