Sky Quan

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EDUCATION

McMaster University   Expected May 2027

Computer Science - Bachelor of Applied Science CO-OP

EXPERIENCE

Software Developer (CO-OP) | Ontario Teachers' Pension Plan   Sept 2024 - Sept 2025

- Rearchitected the company's **Docker** base image system within **Nexus**, consolidating multiple redundant images into a single standardized **Ubuntu** base image, reducing maintenance complexity and improving efficiency.

- Co-led a **POC** for migrating **CI/CD** workflows from **Jenkins** to **GitHub Actions.** Evaluated capabilities and limitation of **actions** compared to **Jenkins**, presenting those findings and best practices to senior leadership, influencing the adoption across multiple teams.

- Increased logging visibility within **Ansible** and **Jenkins** for **Flyway** database migrations across **Snowflake**, **MSSQL**, **Azure,** and **Oracle**, improving troubleshooting and monitoring.

- Implemented **CI/CD** pipelines using **Jenkins, GitHub, Ansible,** and **SonarQube** to automate deployment and testing processes of **.NET**, **python**, and **C#** applications.

- Developed a **Jenkins** pipeline and **Python** script to automate internal webpage updates via a **RESTful API POST request**, streamlining manual change processes.

- Applied **Software Development Life Cycle (SDLC**) methodologies to complete project-specific development tasks within **Agile** and **Scrum** frameworks, using **Jira** for sprint management and **Confluence** for documentation.

- Integrated **SonarQube** to perform automated code quality **testing** and **static analysis** testing across **Dev**, **UAT**, and **Production** environments, enforcing quality gates prior to deployment.

- Deployed and automated **Snowflake** environments using **Ansible**, with containerized workflows running on **Docker and Kubernetes**.

Research Assistant | McMaster University, Computing and Software   May 2023 – Aug 2023

- Worked with Dr. Stephen Kelly to research evolving adaptable control policies using **gymnasium's** pendulum task and **Distributed Evolutionary Algorithms in Python** (DEAP) to conduct experiments on the partially observable pendulum task using **genetic programming.**

- Following Darwin's Law of Natural Selection, developed and **trained** multiple generation of **AI agents** to solve various tasks using **reinforcement learning**.

- Gathered, arranged, and corrected research data to create representative graphs and charts highlighting using **Pandas**, **NumPy,** and **MatPlotLib**.

- My work laid the foundation for other projects now continued by Dr. Stephen Kelly's MA students (https://creativealgorithms-cd4c88.gitlab.io/team/)

Digitization Student Assistant | McMaster University, Digitization Centre   May 2024 – Aug 2024

- **Digitized** nearly **100 physical theses**, converting them into standardized **online PDF formats** for university-wide access.

- Ensured **high-quality scans and formatting**, maintaining institutional standards for readability and accessibility.

PROJECTS

GitHub | https://github.com/Ctrl-Sky

Automatic-Photo-Transfer, *Python*, *Bash, YAML*   *Aug 2025*

- Developed a **CLI-driven Python** application that automates photo transfers, transferring photos from a folder to a hard drive, organizing photos into date-based folders, and handling edge cases (live-photos, unsupported filetypes).

- Designed idempotent migration tracking using **CSV tables** (per-device), so subsequent runs only transfer photos taken after the last recorded timestamp; included **time zone** verification to prevent data drift.

- Implemented robust **EXIF** and **OS-fallback** logic to extract accurate capture timestamps, and added heuristics (e.g., skip <3s MOV live clips) to avoid incorrect migrations.

Groq-Job-App-Generator, *Groq*, *Python*, *Bash, GitHub actions*   *Feb 2025*

- Developed an end-to-end **genAI** pipeline using the **Groq SDK (llama-3.3-70b)** to generate tailored resumes and 225-word cover letters from job descriptions and a structured skillset.

- **Automatically** generated tailored cover letter templates from the optimized resume results, and organized all outputs into structured directories, replicating an artifact

- **Built LLM-based utilities** to extract structured metadata (company name, job title) from job postings using concise **prompts.**

Expense Sheet Combiner, *Python*, *Bash*   *Dec 2024*

- Built a **Python automation tool** to combine and standardize transaction data from my various bank and credit card statements.

- Used **Pandas** and **NumPy** to clean, reformat, and organize expenses by month and date into a single master **Excel** sheet.

Gym Tracker App, *Swift*, *Containers*, *Databases*   *Jan 2024*

- Developed a workout tracking **iOS** app in **Swift** that allows users to create, save, and monitor custom workouts using **persistent storage**.

- Implemented **Core Data** for local persistence, utilizing a **persistent controller** to manage user input and store structured workout data.

- Designed **fetch requests** with filtering logic to retrieve and display relevant **data** efficiently based on user-defined criteria.

- Designed and implemented the **front-end** landing page using **SwiftUI** layout containers (e.g., VStack, HStack, and reusable card-style views) to present workouts in a clear, structured interface.

EXTRA CURRICULARS

AgentX Hackathon | Ontario Teachers' Pension Plan   Jan 2025

- Designed an **AI-powered call assistance agent** to support the customer service team.

- **Real-time AI system** that listens to conversations and suggests appropriate actions based on customer requests.

- Enables **automatic task execution** allowing call agents to confirm AI-suggested actions

Code Create Hackathon | Canada Learning Code   Sept 2023

- Collaborated with a team to develop a **website promoting sustainability in the technology sector**.

- Designed an **interactive platform** to educate users on **eco-friendly practices** in tech, such as energy-efficient coding and e-waste reduction.

Teen Ambassador | Canada Learning Code   July 2021

- Led **hands-on workshops** teaching youth (ages 8-12) how to program using **PyGame**.

- Fostered a **fun and engaging learning environment**, encouraging creativity and problem-solving through coding.

HONORS AND AWARDS

DECA Alumni Entrance Scholarship | McMaster | **$15,000**   Sept 2022

- One of 10 students awarded this award
- Earned by demonstrating **leadership, initiative, and strategic thinking** as **President of DECA**.

Dean's Excellence Engineering Research Experience Award | McMaster | **$6000**   Sept 2022

- Qualified by being among the top-ranking students in the Faculty of Engineering at the time of admission

McMaster Award of Excellence | McMaster | **$3000**   Sept 2022

- Qualified by maintaining a **97% +** academic average