

Brendan R. Fallon

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Highlights of Qualifications

- Aspiring **tools programmer** in the video game industry
- **Great communication & soft skills** through research, team leadership, and work experience
- **Self-directed**, asks questions, a **quick learner** in the face of a steep learning curve
- Adept in **application and game tools development** in **C#, Unity, Python**, and **C/C++**

EDUCATION

Master of Engineering, Computing and Software

Sept. 2020 – Graduating Sept. 2023

McMaster University GScale Lab - 1280 Main Street West, Hamilton, ON, L8S 4L8

- Computer science and software engineering, focusing on **game software**
- Research project **generating emotions** for NPCs
- **Bootstrapped software skills** with software engineering and computer science courses
- **Created** an NPC pathfinding maze solver, a domain-specific language for NPC creation, and domain-specific language for interactive fiction parser generators.

Bachelor of Engineering & Society, Engineering Physics – Robotics

Sept. 2014 – April 2019

McMaster University Hamilton Campus

- A multidisciplinary program covering physics, electrical, materials, and mechatronic engineering

Eclipse Innovative Capstone Project

Sept. 2018 – May 2019

- Strengthened **teamwork** and **software** skills by creating an automatic light-blocking windshield
- Python OpenCV light & eye detection image processing into a multithreaded Raspberry Pi
- Won **1st** place in **Innovative Design** at **McMaster Engineering Competition**
 - Followed by **2nd** and **4th** place in at **Ontario** and **Canadian Engineering Competitions**
- Managed time commitment **time management** skills with 10-20 hours per week on top of full-time university

Relevant Courses

Software Engineering

- Optimized C/C++
- Game Design in Unity
- Software Design
- HCI Design
- Programming
- Signal Processing

Computer Science

- Data Structures & Algorithms
- Programming Languages
- Compilers & Syntax tools
- Metaprogramming
- Quantum Programming

Math

- Discrete math
- Calculus and Linear algebra
- Statistics and Probability
- Computational Methods
- Scientific Computing

WORK EXPERIENCE

Teaching Assistant, Software Capstone, Quantum Programming

Sept. – Dec 2022

McMaster University: 1280 Main Street West, Hamilton, ON, L8S

- Taught tutorials, created rubrics, and grading for students' projects, assignments, and tests.
- Taught and reviewed code in a diverse set of technology including **Unity, Javascript, Python, C++, C# machine learning**, and **blockchain**.

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L3Harris Wescam Operations Engineering, Optics Specialist

May 2019 – June 2020

649 North Service Road, Burlington, Ontario, Canada

- Working as an **off-shift weekend manufacturing optics support** for issues on aerospace-grade gyro-stabilized electro-optical imaging and laser designating systems
- **Learned** complicated products & processes **quickly** to become capable in **6 months**
- Strengthened **problem-solving skills** while troubleshooting manufacturing systems and automated testing problems **under pressure**
- Used **communication skills** to integrate into a **remote multidisciplinary** team, collaboratively worked with technicians on the line, and authored manufacturing documents effectively
- **Worked unsupported** on weekends & **self-started** to solve automated setup issues in C#
- Training on **lean methodologies**, Kanban, 5S, and 8D root cause assessment
- Produced a **record number of systems** during high-stress periods to help showing **work ethic**

EXTRACURRICULAR ACTIVITIES

Life in Computer Science President

Oct. 2021 – Present

- **Social club** hosting coffee houses, board game nights, and seminars on artificial intelligence
- 30-minute **Ted-style talk** on game engines, hardware acceleration, and ray tracing **Feb. 2020**

NEUDOSE Satellite Team Full Stack Tool Developer

May – Sept. 2022

- Developed monitoring app using **Electron, React, Javascript, and Typescript**

Engineering Physics Text Adventure

April 2018 – Nov. 2019

- Passionately **developed** a **text adventure** game engine **from scratch** in **Python 3**.
- Implemented **software development best practices** through implementing **PP8**, version control in **Git & Github**, and **code documentation**
- Learned **game programming** through making implementing game loop, quests, random events, start menu, custom text display, save & loading game states, and **recursive gameplay**
- **Extensively researched** interactive fiction natural language parsing to create a basic Infocom-type parser filled with colours, quick commands, and autocorrect to **improve user speed by 70%**
- Featured at Engineering Physics Kipling day and social media release reached over **1500 people**

McMaster Rocketry Captain, Avionics Lead, & System Engineer

Sept. 2016 – April 2019

- **Lead** a group of 20 undergraduates and graduates to design a class N rocket with 10,000ft apogee for the 2019 IREC competition improving **communication & teamwork**
- Improved **team organization** with a focus on **documentation** and **project management**

Summary of SKILLS

Software Theoretical

- Game design, NPC agents, user testing
- Programming languages, functional programming, metaprogramming
- Compilers & syntax-based tools
- Model-driven engineering, EMF

Software Practical

- Extremely proficient in Python, VBA, Matlab, OOP, Word, Excel, and PowerPoint
- Adept in C#, Unity, C++, JavaScript, Java, Assembly, Git, Markdown, AOP, Haskell, Agda
- Game, tool, and interface design