Brendan R. Fallon

| Links | Website | LinkedIn |
| @ fallonbr@mcmaster.ca | +1 (647) 892-7156 |

Summary Statement: Jack-of-all-trades engineering Instructional Assistant at McMaster University moonlighting as a software developer. In love with Excel during the day and passionate about developing the right tools for the job by night.

Highlights of Qualifications

- **Great communication** & **soft skills** through research, team leadership, and work experience.
- **Self-directed**, asks questions, **team player**, a **quick learner**, **organized**, and **detail-oriented**.
- Excellent **project management**, **mentorship**, **Excel**, and **planning** skills through administration.
- **Mid-level software developer, C/C++** (4yrs), **C#** (5yrs), **Unity** (5yrs), and **Python** (11yrs).

WORK EXPERIENCE

Instructional Assistant II
Sep. 2024 – Current

McMaster University, Fundamental Skills in Engineering (FUSE) – Hamilton, ON

- Developed, planned, and administered the **largest courses at McMaster University**.
- Taught engineering: **Python**, **communication**, **finance**, Inventor, **professionalism**, and ethics.
- Made tools for scheduling and managing over 1000 students, becoming an **expert in Excel**.
- **Developed infrastructure** for course execution and became an SME in Top Hat and Crowdmark.
- Mentored, supervised, and reviewed intern work. Improving **leadership** and **writing** skills.
- Self-hosted an interactive Python textbook with **Docker compose**, **Red Hat Linux**, & **Apache**.
- Self-managed projects, including PIP, where improved **active listening**, **prioritization**, **project management**, leadership, AI generative tools use, and **time management**.

Teaching Assistant, Engineering Ethics
Sep. 2024 – Dec. 2024

McMaster University – Hamilton, ON

CAS M.Eng. Candidate
Sep. 2020 – Aug. 2024

McMaster University – Hamilton, ON

- Working under Dr. Carette and Dr. Smith as my supervisors in the McMaster G-ScalE Lab.
- Utilizing **C# emotion engine library** API (EMgine) to do integration testing in **Unity**.
- Created Joy emotion prototype, which **identified Gitlab issues** of correctness and accuracy.
- Reviewed features of current engines to create "researchable video game engine criteria".
- Reviewed cognitive agent systems and created criteria for EMgine integration.
- Reviewed NPC algorithms and software engineering methodologies, including software licenses, requirements documentation, and testing methodologies.
- Learned about **academic writing**, **research skills**, paper reading, **MS Word**, and **Tex/LaTeX**.

Operations Engineering, Optics Specialist
May 2019 – Jun. 2020

L3 Harris Wescam - Burlington, ON

- Working as an **off-shift weekend optics support** for issues in aerospace manufacturing.
- **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.**
- **Worked unsupported** on weekends & **self-started** to solve automated setup issues in **C#**.
- Training on **lean methodologies**, Kanban, 5S, and 8D root cause assessment.

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EDUCATION

Master of Engineering, Computing and Software — Sep. 2020 – Aug. 2024

McMaster University – Hamilton, ON

- Computer science and software engineering, focusing on **game tools software**.
- Thesis on **generating emotions** for NPCs in **Unity** via an **emotion engine API**.
- Supplemented **physics background** with software and computer science courses.

Bachelor of Engineering & Society Co-op, Engineering Physics — Sep. 2014 – Apr. 2019

McMaster University – Hamilton, ON

- **Multidisciplinary program** covering physics, electrical, materials, and mechatronic engineering.
- **Well-rounded** with Eng. Society program focusing on sustainability and a **minor in CS/robotics.**
- **Professional experience** through four co-op terms at engineering companies.

SIDEQUESTS & PROJECTS

- Software Book Club – Meeting bi-weekly to research and discuss trends in software. Jun. 2025
- McMaster Game Jam – Out of Bounds – Monochrome painting platformer in Godot. Mar. 2024
- 2023 GMTK Game Jam – Big Boss Dungeon - Role reversal dungeon crawler in Unity. Jul. 2023
- Rune Finder – Minesweeper-like solving tool using **MS PowerPoint** shape unions. Mar. 2023
- NPC Racer – Comparison of **NPC pathfinding** algorithms such as Dijkstra/**A*** in **C++**. Dec.2022
  - Utilized **Doxygen** docstrings, custom mazes, **terminal** program, and **efficient C++**.
- Game Design Jams – Course on design, programming, and development in Unity. Apr. 2022
- LiCS President – Social club for Computer Science and AI seminars. 2021-2022
- NEUDOSE Satellite Tool Dev. - monitoring app using **Electron**, **React**, **JS/TS.** May – Sept. 2022
- EPTA – Passion project **terminal** text adventure game made in **Python 3**. 2018 – 2019
  - Feature-rich quests, events, coloured display, saving/loading, and **recursive gameplay**.
  - Custom engine and Infocom parser that **improved user speed by 70%**.
  - **Open-source** 10k LOC, **best practices** PEP8, and reached 1500 people.
- Eclipse Capstone – Automatic Light Blocking Windshield Sept. 2018 – May 2019
  - **Python OpenCV** light & eye detection image processing into a **multithreaded** Raspberry Pi.
  - **Innovative Design Awards:** 1st place MEC, 2nd place OEC, and 4th place CEC.
- Rocketry Captain – Led 20 students, designed N class 10,000-foot rocket for IREC. 2016 –2019

Summary of SKILLS

Software Theoretical

- Game design & NPC algorithms.
- Programming languages, functional programming, & metaprogramming.
- Compilers & syntax-based tools.
- Model-driven engineering, EMF
- HCI and user testing.
- Requirements documentation.

Software Practical

- Extremely proficient in Python (11yrs), C# (5yrs), Unity (5yrs), C/C++ (4yrs), Git/GitHub revision control (7yrs), Markdown (7yrs), MS Suite -Word Excel PowerPoint (20+yrs), & NUnit (3yrs).
- Adept in Docker, Linux, operating systems, networking, MATLAB, JavaScript, VBA, Java, Assembly, Haskell, and Agda.
- Microsoft & Google Suite, Jira, and Confluence.