

# Emre Bozkurt

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*Aspiring Software Engineer with experience in Python, C++, and Java. Passionate about large-scale systems, visualization tools, and simulation frameworks.*

## EDUCATION

### McMaster University

Hamilton, ON

*Bachelor of Applied Science in Computer Science (GPA: 3.88)*

*Aug. 2024 – May 2028*

- Relevant Coursework: Data Structures & Algorithms, Computer Architecture, Software Development, Databases, Concurrency, Operating Systems, Computer Networks (planned).

## EXPERIENCE

### Research Assistant I

Sep 2025 – Present

*McSCert, CAS (Hybrid, Part-time)*

*Hamilton, ON*

- Developing Python and C++ visualization tools for detecting time synchronization faults in Time-Sensitive Networking (TSN) systems.
- Improving diagnostic efficiency by automating data collection and visualization pipelines.

### Research Assistant I (CO-OP)

May 2025 – Jul 2025

*McSCert, CAS*

*Hamilton, ON*

- Developed Python OOP frameworks for simulating autonomous vehicle safety using CARLA (Unreal Engine).
- Automated test scenario generation, reducing manual configuration time and improving reproducibility.

### Algorithms Team Member

Feb 2025 – Present

*McMaster Battery Workforce Challenge*

*Hamilton, ON*

- Implementing algorithms for EV battery SoC estimation and thermal control using Python and MATLAB.

### Intern

Jun 2023 – Jul 2023

*La Perle by Dragone*

*Dubai, UAE*

- Worked across IT, Finance, HR, and Front-of-House departments; deployed and troubleshoot over 25 workstations and network devices.

## PROJECTS

### Lumiwoods (Startup Competition) | *Unity, C#, SpacetimeDB, React.js*

May 2025 – Present

- Co-founded and led backend development for a game improving children's emotional well-being; integrated Unity client with SpacetimeDB backend.
- Received ongoing mentorship from The Forge at McMaster after competition completion.

### 3D Rendering Engine | *C++, OpenGL*

May 2024 – Jul 2024

- Implemented vertex buffers, shaders, and real-time transformations with OpenGL 4.3 in C++.
- Built an interactive editor for modifying 3D objects dynamically.

### Chat App | *Python, OpenZiti, Tkinter*

May 2024 – Sep 2024

- Built secure client-server chat application using Python sockets and OpenZiti tunneling for global connectivity.
- Designed a GUI resembling modern messaging apps using Tkinter and OOP principles.

### Database Management Systems | *Java, SQL*

November 2023 – February 2024

- Developed an extensive number of database management systems using the NetBeans IDE, connecting the Java programs to an SQL Database using Microsoft JDBC Driver to handle data storage.
- In total, developed 10 programs, and sold 9 for a profit of over 800 USD.

## TECHNICAL SKILLS

**Languages:** Python, C++, Java, C#, JavaScript, SQL, Lua/Luau, Haskell, MATLAB, PHP, HTML/CSS

**Frameworks:** React.js, Node.js, Next.js, Flask, Unity

**Cloud & Tools:** AWS (EC2, S3), Docker, Git, Linux (Home server setup with Cloudflare WARP), Cloudflare, VS Code, IntelliJ, PyCharm, Visual Studio

**Libraries:** NumPy, Pandas, Matplotlib, glfw, glew, socket, tkinter