

Brendan Gorchinsky

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Education

Western University

2021 – 2025 (Expected)

Bachelor of Engineering Science, Software Engineering

Professional Experience

General Laborer, Golf Operations

June 2024 – August 2024

City of Hamilton

- Operated ride-on equipment to maintain tee decks, greens, approaches, and aprons.
- Maintained sand bunkers by raking, trimming edges, and pumping out water on rainy days.
- Applied soil and seed to tee decks to support turf regeneration and repair.
- Trimmed grass and weeds around the course, clubhouse, and parking areas.

Estimating Student (Co-op)

May 2022 – August 2022

PCL Construction

- Performed quantity takeoffs using On-Screen-Takeoff (OST), Bluebeam Revu, and Microsoft Excel.
- Communicated scopes of work, specifications, and deadlines with sub-trades for various construction projects.
- Assisted in closing the tendering stage for two separate divisions- miscellaneous metals, and demolition for a special project.

Youth Soccer Coach

May 2021 – August 2021

Soccer World

- Coached U6 and U8 teams with weekly practices and games.
- Planned unique and engaging drills and activities to develop fundamental soccer skills each week.
- Set up and took down field equipment before and after games/practices.
- Supported game-day operations and encouraged team spirit and sportsmanship.

Crew Member

May 2021 – August 2021

Harvey's

- Grilled and fried menu items in accordance with food safety and health regulations.
- Assisted with nightly cleanup to maintain a clean and safe kitchen environment.
- Prepared and stocked food stations to ensure readiness for the next day's operations.

Projects

Rustborn: A 2D Sandbox Game

C#, Unity | Group

- Voted as one of the top 5 capstone projects in my 4th year software engineering capstone course.
- Collaborated in a 3-member Agile team to design and develop a 2D sandbox game featuring mining, crafting, building, and combat mechanics in a procedurally generated world.
- Developed a procedural world generation system using random binary maps and the marching squares algorithm, with cave and ore structures generated via a random walk algorithm.
- Engineered dynamic terrain interaction mechanics (mining and placing) with real-time chunk updates driven by the marching squares algorithm, optimizing for responsiveness and visual coherence.
- Created and modified 2D sprites using Aseprite, integrating them into Unity to support gameplay mechanics and aesthetic consistency.

Animal Image Clustering Model

Python | Group

- Worked in a team setting to build an unsupervised image clustering system to group images of five animal species using K-Means clustering.
- Preprocessed and extracted features from raw image data for clustering and visualization.
- Used the elbow method and silhouette scores to determine optimal cluster count and evaluate performance.
- Applied feature extraction techniques to improve clustering quality and explored integration with transfer learning.
- Demonstrated ability to analyze high-dimensional data and apply machine learning in a real-world, unlabelled image context.

Mesh Generation and Rendering using Marching Cubes

C++, OpenGL | Individual

- Implemented the marching cubes algorithm to extract triangle meshes from scalar fields.
- Created a Phong lighting model using custom GLSL vertex and fragment shaders to visualize the algorithm's output.
- Designed a camera system using spherical coordinates for interactive 3D scene rotation.
- Developed a utility function for exporting the meshes to PLY file format.

Education Storage

Java, JavaFX | Individual

- Developed an academic grade management system using Java and Apache Derby for persistent storage of inputted course grades.
- Designed a custom UI for simple and efficient navigation through the application.

- Built to provide an efficient way of keeping track of grades and calculating GPAs with specific parameters used by fellow students.

Google Web Scraper

Java, JavaFX | Individual

- Designed and implemented a web scraper application with Java and the jsoup library that further refines, and filters google searches.
- Initially created to assist a security specialist track and identify threats to public service employees and saved hours in each investigation.
- Further adjusted the application UI to be used by many of my peers.

Investment Analysis

Python | Group

- Worked in a development team to design and develop a predictive AI model for the stock market using python.
- Used the AlphaVantage API to pull real-time and historical stock market data for analysis.
- Utilized an LSTM network to predict the next day's closing price of individual stocks.

Face Space: 2D Bullet Hell

C#, Unity | Individual

- Developed a simple 2D bullet hell game with fast-paced combat and score tracking.
- Designed and programmed a player controller with dashing and a unique special ability.
- Implemented 5 enemy types, each with distinct attack patterns and behaviors.
- Created a scoring system and persistent leaderboard using PlayerPrefs, encouraging replay potential and competition.

Technical Skills

Programming Languages: C++, C#, Python, JavaScript, Java

Tools: GitHub, Unity Version Control

Graphics and Game Development: OpenGL, Unity, Shader Programming

Foundational Knowledge: Computer Graphics, Deep Learning, Object-Oriented Programming, Assembly Language, Reinforcement Learning, Data Structures, Cloud Computing

Community Involvement and Extracurriculars

Western AI
Western University

2022 – 2024

Conference Delegate Selection Committee Western University's Undergraduate Engineering Society (UES)	2022
Basketball Referee CYO of Hamilton	2018 – 2020
Basketball Scorekeeper Grimsby Basketball Association (GBA)	2019

Awards and Scholarships

Dean's Honor List Western University, Faculty of Engineering	2022, 2023, 2024
<ul style="list-style-type: none"> Awarded for earning a year average of over 80% with no failed courses. 	
Lorraine Ivey Shuttleworth Continuing Award Western University	2022, 2023, 2024
<ul style="list-style-type: none"> Awarded one of six awards for high academic standing and demonstration of financial need. 	
Western Scholarship of Distinction Western University	September 2021
<ul style="list-style-type: none"> Awarded to students with a minimum 92.5% admission average into university. 	
Award for Academic Excellence St. John Henry Newman Catholic Secondary School	June 2021
<ul style="list-style-type: none"> Awarded for having one of the top academic averages of the 2021 graduating class. 	
St. John Henry Newman Chemistry Award St. John Henry Newman Catholic Secondary School	June 2021
<ul style="list-style-type: none"> Awarded for having the highest 4U chemistry average of the 2021 graduating class. 	

Certifications

Implement DevOps Workflows in Google Cloud Skill Badge Google Cloud Skills Boost, GCP	Issued 2025
Deploy Kubernetes Applications on Google Cloud Skill Badge Google Cloud Skills Boost, GCP	Issued 2025