Michael Salton

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Education

The University of Western Ontario   *London, Ontario*
Bachelor (BSc) of Computer Science + Minor in Video Game Development   September 2020 - June 2024

Skills / About

Tools	C/C++, C#, HLSL, CG, GLSL, OpenGL, Vulkan, DirectX, Unity, Unreal Engine, WebGL, Rust, Python, Kotlin, Java
Concepts	Shaders, GPGPU, Post-Processing, Ray Tracing, Physically Based Rendering, Anti-Aliasing, Photogrammetry
Math	Topology, Graph Theory, Trigonometry, Linear Algebra, Matrices, Discrete Math, Computational Geometry, Calculus
Spoken Languages	English, French

Experience

Game Developer (Unity)   *London, Ontario*
Saltbox Interactive   September 2023 - Present
- Developing an educational game on the themes of archaeology, architecture, archive, history, and oral history, on the town of D'Hanis, Texas.
- The game was selected to be presented at the Society for Historical Archaeology Conference 2025 (SHA 2025) in New Orleans, Louisiana.
- The game utilizes topographic data to recreate a realistic landscape featuring various ruins and structures the player can explore and learn about.

Software Developer (Mobile)   *London / Red Deer*
Peavey Industries   September 2022 - Present
- Developing modern Android applications, using Kotlin, Jetpack Compose, Google's Material Design, Django, and PostgreSQL.
- Adopting agile methodologies within the Scrum framework, ensuring the flow of project tasks with a focus on delivering high-quality results.

Graphics Software Engineer (OpenGL / Vulkan)   *London, Ontario*
The University of Western Ontario   May 2022 - September 2022
- Worked with the Biology department to implement sophisticated shaders and visual effects to elevate the realism of 3D ecological simulations.
- Used OpenGL and Vulkan APIs to develop custom tools for advanced procedural texture generation and dynamic environmental effects.
- Optimized complex rendering pipelines to enhance the performance and visual fidelity of interactive graphical applications and simulations.

Extra-Curricular

Western AI   *The University of Western Ontario*
Project Manager / Developer   August 2022 - March 2024
- Presented machine learning project at the Canadian Undergraduate Conference on Artificial Intelligence 2023 and 2024 in Kingston, Ontario.
- Guided a team of students through the process of planning, designing, and developing a machine learning agent for a video game.
- Hosted workshops to help students learn concepts like reinforcement learning, neural networks, data analysis, and software engineering.

Projects

OpenGL Lighting Simulation
Built with OpenGL and C++   November 2023 - June 2024
- Designed an OpenGL / C++ lighting engine from scratch, incorporating advanced rendering techniques and optimized performance.
- Implemented a dynamic lighting system that supports multiple light sources, allowing for dynamic shadows and realistic reflections.

3D Pixel Art Engine
Custom engine and rendering pipeline built on top of Unity   October 2023 - May 2024
- Developed various graphical tools, a pixellated camera with pixel-perfect rendering and sub-pixel movement, ensuring precise camera motion.
- Created toon and grass shaders as well as a grass spawning tool using Poisson Disc Sampling for even distribution and optimal performance.

The Wild Waste
Isometric roguelike video game built with Unity   September 2023 - December 2023
- The core gameplay loop is based around a day/night cycle that forces the player to search for shelter and fend off enemies in order to stay alive.
- The game includes procedural map and enemy generation, weather effects, dynamic footprints, loot particle effects, and a custom toon shader.

Publications

- **Michael Salton**, Ethan Pisani, Swayam Sachdeva, "Comparing AI Navigation Methods Using Counter Strike: Global Offensive," March 19, 2023. [Link]