

# Hamish McDonald

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Aspiring game programmer with a strong foundation in mathematics, physics, and software engineering. Experienced in C++ development and game technologies such as Raylib, Unreal, and Godot. Passionate about algorithms, graphics programming, and systems design. Currently studying Game Programming at AIE Melbourne.

## Education

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| <b>Academy of Interactive Entertainment</b>          | Docklands, VIC    |
| AdvDip(GameDev) in Game Programming                  | 02/2025 - Present |
| <b>Monash University</b>                             | Clayton, VIC      |
| BscAdvResearch(Hons) in Pure Mathematics and Physics | 01/2023 - 12/2024 |

## Experience

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|---|--|-------------------|
| <b>Tutor</b>  | North Shore Coaching College, Box Hill | 01/2025 - Present |
| <ul style="list-style-type: none"><li>Deliver engaging and structured lessons to primary and secondary students in a classroom setting, with a focus on academic enrichment and exam preparation.</li><li>Support individual student progress through personalized feedback and targeted learning strategies.</li><li>Collaborate with academic staff to align lesson plans with the college's curriculum standards and goals.</li><li>Foster a positive and disciplined learning environment that encourages student participation and confidence.</li></ul> |  |                   |
| <b>Tutor</b>  | Tutero, Remote                         | 01/2024 - 01/2025 |
| <ul style="list-style-type: none"><li>Provided one-on-one online tutoring across a range of subjects to high school students, with a strong focus on building conceptual understanding and study skills.</li><li>Customized lesson plans to suit individual student needs, learning styles, and academic goals.</li><li>Utilized digital tools and interactive platforms to enhance engagement and track progress.</li><li>Maintained consistent communication with students and parents to monitor growth and provide ongoing support.</li></ul>             |  |                   |

## Projects

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| <b>Punctual Plus Employee Management Software</b>   |
| Tech Stack: React.js (Frontend)   C++20 (Backend)   SQLite   OpenSSL   JWT Authentication   git (version control)   |
| <ul style="list-style-type: none"><li>Engineered a C++ backend utilising SQLite integration, thus allowing for more efficient data storage and retrieval.</li><li>Ensured the project had secure authentication through the use of bcrypt, OpenSSL, HTTPS, and JWT.</li><li>Strengthened skills in network security, full-stack development, and GNU/Linux.</li></ul> |

## Awards and Honors

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| <b>Deans List 2023</b> (WAM > 85), Monash University | 2023 |
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## Skills

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| <b>Programming Languages:</b> 🐍 Python, 🟡 C++, 🟦 Lua, 🐉 GDScript, GLSL  |
| <b>Mathematics and Algorithms</b>   |
| <ul style="list-style-type: none"><li>Analysis</li><li>Linear Algebra</li><li>Calculus (single variable, multivariable)</li><li>Differential Equations</li><li>Numerical Methods (Basic)</li><li>Data Structures</li><li>AI and Collision Algorithms (A*, GJK, etc)</li><li>Design patterns (observer, singleton, factory, etc)</li></ul> |
| <b>Tools and Frameworks:</b> Git, Perforce, CMake, Raylib, CrowCPP, SQLite, $\LaTeX$ , OpenGL, Unreal, Godot, Roblox Studio   |
| <b>Other:</b> JWT, OpenSSL, GNU/Linux, Visual Studio, GLM, NumPy, Matplotlib, SymPy, Dear ImGui   |
| <b>Languages:</b> English (native), Japanese (limited working proficiency)  |