Hamish McDonald

XXXX-XXX-XXX | hamish.pk.mcdonald@gmail.com | hamishmcd123 | hamishmcd.xyz

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

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

Experience

Tutor — North Shore Coaching College, Box Hill — 01/2025 - Present
- Deliver engaging and structured lessons to primary and secondary students in a classroom setting, with a focus on academic enrichment and exam preparation.
- Support individual student progress through personalized feedback and targeted learning strategies.
- Collaborate with academic staff to align lesson plans with the college's curriculum standards and goals.
- Foster a positive and disciplined learning environment that encourages student participation and confidence.

Tutor — Tutero, Remote — 01/2024 - 01/2025
- 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.
- Customized lesson plans to suit individual student needs, learning styles, and academic goals.
- Utilized digital tools and interactive platforms to enhance engagement and track progress.
- Maintained consistent communication with students and parents to monitor growth and provide ongoing support.

Projects

Punctual Plus Employee Management Software
Tech Stack: React.js (Frontend) | C++20 (Backend) | SQLite | OpenSSL | JWT Authentication | git (version control)
- Engineered a C++ backend utilising SQLite integration, thus allowing for more efficient data storage and retrieval.
- Ensured the project had secure authentication through the use of bcrypt, OpenSSL, HTTPS, and JWT.
- Strengthened skills in network security, full-stack development, and GNU/Linux.

Awards and Honors

Deans List 2023 (WAM > 85), Monash University — 2023

Skills

Programming Languages: Python, C++, Lua, GDScript, GLSL
Mathematics and Algorithms
- Analysis
- Linear Algebra
- Calculus (single variable, multivariable)
- Differential Equations
- Numerical Methods (Basic)
- Data Structures
- AI and Collision Algorithms (A*, GJK, etc)
- Design patterns (observer, singleton, factory, etc)

Tools and Frameworks: Git, Perforce, CMake, Raylib, CrowCPP, SQLite, LaTeX, OpenGL, Unreal, Godot, Roblox Studio
Other: JWT, OpenSSL, GNU/Linux, Visual Studio, GLM, NumPy, Matplotlib, SymPy, Dear ImGUI
Languages: English (native), Japanese (limited working proficiency)