

Roland Shum

Tools Engineer

<https://rolandshum.carbonmade.com/>

Contact Info

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EXPERIENCE

CS315 Low Level Programming TA

DigiPen, Teacher's Assistant

Aug 2019 – Present
Assembly, C, C++, PowerShell

- Modernized the auto-grading system by integrating with GitHub Actions
- Reviewed and graded over two 30 student classes' work.
- Developed a GitHub page where course materials can be accessed easily

Tools Engineer & Co-Producer

Digipen, Arc Appellego - PC 2D Platformer Action Video Game

Aug 2019 – April 2020
Team Size: 12 - **C++ Custom Engine**

[Available on Steam Store](#)

- Management of **12 cross disciplinary** team members
- Integrated Azure cloud **Continuous Integration** system to ensure best practices
- Designed architecture that parses reflected C++ code and generates the appropriate JSON file.
- Maintained **self-hosted Gitlab (Linux)** that integrates software issues with production features, so that producers can account for bugs and issues when scoping tasks.
- Created a **C# Stub Instantiator Tool** for instantiating stub files.

Tools Engineer

Independant, BlockPlob - Android Puzzle Game

Apr 2016 – July 2016
Team Size: 2 - **Unity C#**

Published on Play Store

- Indie game developed and **published on the Play Store with Firebase integration**
- Developed **game mechanics** of manipulating gravity to drop boxes.
- Developed **level editor tools** that increased production speed by 200%

Corporal First Class, Sector Response Force

Singapore Armed Forces - Infantry Section Leader - Singapore

July 2016 – July 2018
Section Size: 8

- Awarded two Army Achievement Medal for service
- Raised IPPT Gold proficiency of platoon from 45% to 98%

Technical Director & Co-Producer

Nanyang Polytechnic, Don't Touch My Loot - PS4 Strategy

July 2015- Jan 2016
Team Size: 12 - **Unity C#**

- Led a team of 5 programmers, 5 artists, and 2 designers to develop video game mechanics
- Created a **custom editor tool for creating Behavior Trees for AIs**

PROJECTS

Independent Project

Miners Bomb Miners, Multiplayer PC 2D Action Video Game

Dec 2015- June 2015
Independent - **Unity**

- **Designed and abstracted networking** architecture from Game logic.
- Integrated multiplayer networking into the game.

Among Us Proximity Mod Contributor

Among Us Mumble Proximity Mod - PC

Dec 2020- Present
Open-Source Contributor

- Added multiple features that enhance the mod experience to the game.
- Unpacked and deobfuscated Among Us DLL.
- Injected code into Among Us base game through exploitation of windows API and DLLs.

Debug Specialist

Nanyang Polytechnic, Falling Block - PS3 Puzzle Game

Jan 2016- Apr 2016
Team Size: 2 - **Custom C++ Framework**

- Utilized SPUs to parallelize game logic, improving FPS by 300%
- Utilized SIMD instructions to improve the FPS by 30%.
- Moved gaussian blur effects from PPU-SPU to GPU, raising the FPS from 20 to 60.

Software Engineer Intern

Neeuro Pte Ltd - Singapore

Mar 2015 – June 2015
Team Size: 2

- Created 6 brain-training games for mobile app that quantifies and trains the user's brain.
- Integrated Java to Unity3D interoperability bridge, allowing for bluetooth connection to app

SKILLS

Programming:

C/C++
C#
Java
HTML
Python
JavaScript
Lua

Technical:

Game Engine Architecture
Game Programming
Game AI Programming
Serialization
Memory Management
Tools Development
Model View Controller
Prototyping
Unix / Linux
Remote Debugging
Debug
GitLab; GitHub
Continuous Integration
RenderDoc
OpenGL
Computer Graphics
Agile
Database / Algorithms
Object Oriented Design
Data Structures

Soft Skills:

Best Practices
Creative
Enthusiastic
Problem-Solver

EDUCATION

Bachelor of Computer Science in Real-Time Interactive Simulation

DigiPen Institute of Technology
Expected April 2022