

# Roland Shum

## Game Development Engineer

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### SKILLS

#### Programming Languages

C++ | C | C# | Python | Java | PowerShell | Bash | YAML

#### API / Engine

OpenGL | Unity | Vulkan

### ACADEMIC PROJECTS

#### Technical Director, Department of Astromaterial Acquisition

08/2020 – 04/2021

Team of 10 - C# | Unity

3D single-player PC voxel adventure game using Unity engine

- Scoped and organized taskwork timeline such that game can be finished in 12 weeks
- Created item system and its 20+ items for the player to have a greater degree of freedom
- Implemented player controls for the game, including placing items, destroying items, and UI
- Created an item crafting graphical tool so designers can modify the crafting experience graphically

#### Engine Developer, Arc Apellago

08/2019 – 05/2020

Team of 12 - C++ | Custom Engine

2D single-player PC action platformer; **Published on Steam** 📄

- Automated test systems using AWS that have caught 20+ unintended broken pushes
- Setup Azure build system that ensured artists and designers would get the latest version of build
- Wrote ImGui reflection system that automated the burden of programmers writing engine UI code
- Implemented serialization that automated the writing of serialization code for components in ECS

#### Game Developer, Deltablade2700

01/2019 – 07/2019

Team of 11 - C | Custom Engine

2D local-multiplayer action platformer; Showcased in **PAX2019 + PAX2020**; **Published on Steam** 📄

- Developed scene manager that allowed programmers to change scenes anytime in-game
- Created content such as the main menu UI, the options menu options, and placing of visual effects
- Developed and used particle system for over 20+ particle effects for visual feedback

### PROFESSIONAL EXPERIENCE

#### Teaching Assistant for Game Project (GAM2XX), DigiPen

08/2020 – present

- Provided technical mentorship to ~38 Sophomore game teams writing custom C++ engines
- Identified 7 common issues in teams, and created 8 slide decks that teaches game designers, artists, programmers, and audio designers on how to mitigate said issues

#### Head Teaching Assistant for Low-Level Programming (CS315), DigiPen

08/2020 – 04/2021

- Supported automation system with GitHub Actions that graded 21 students over 6 projects
- Assisted 21 3rd year students with implementing assignments like writing their own debugger

### INDEPENDENT PROJECT

#### Open Source Contributor, 'Among Us' Proximity Voice Chat Mod

12/2020 – 01/2021

Solo - C++ (DLL) | Unity; **Released on Github** 📄

- Worked with 4 other modders online on the highly popular 'Among Us' game on PC
- Delivered highly requested radio mod after working with key community members in 2 weeks

#### Indie Developer, BlockFall

03/2016 – 07/2016

Team of 2 - C# | Unity; **Published on Play Store**

- Designed and iterated on 4 puzzle mechanics over 48 levels to create a challenging experience
- Redesigned puzzle backend with a tool that reduced level making time from 30 min to 5 min

### EDUCATION

#### B.S Computer Science in Real-Time Interactive Simulation

08/2018 – 05/2022

DigiPen Institute of Technology, Dean's List (x4)