Emma Cross

Software Engineer, Game Programmer

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SKILLS

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| --- | --- | --- | --- |
| PROGRAMMING LANGUAGES | ENGINES | LIBRARIES | SOFTWARE |
| **C++** (proficient) | **Unity** (familiar with) | **OpenGL** (intermediate) | **Visual Studio** (proficient) |
| **C** (proficient) | **SFML** (intermediate) | **Lua** (beginner) | **Audacity** (intermediate) |
| **Java** (intermediate) |  |  |  |
| **JavaScript** (intermediate) |  |  |  |

EDUCATION

**BS in Computer Science in Real-Time Interactive Simulation** Expected Grad April 2024

DigiPen Institute of Technology, Redmond WA 3.6 cumulative GPA

ACADEMIC PROJECTS

**Tech Lead, Graphics Programmer** August 2021 – April 2022

Cooper’s Cleanup – 2D Collectathon Adventure (C++ custom engine)

* Implemented graphics rendering and fog-of-war lighting effects using OpenGL
* Designed art pipeline to give non-programmers the ability to input meshes and textures
* Created dynamic menu system fully usable by game designers via JSON files and Lua scripting
* Conducted programmer meetings, communicated with other disciplines, and managed team documents & work schedule as tech lead

**Gameplay & Tools Programmer** January – April 2021

Hairaiser – 2D Platformer (C using AlphaEngine)

* Built fully interactable custom level editor that allowed teammates to design and iterate upon created levels
* Developed several features for the level editor including wall, platform, enemy, and decoration placement that serialized to a JSON file for rebuilding the level during gameplay
* Designed and implemented player hair attack that could deal damage to enemies and allow for progression through the game

**Gameplay Programmer** October – December 2020

Turreting Test – 2D Top-Down Shooter (C using CProcessing engine)

* Developed gun behaviors and water balloon arc trajectories for players to deal damage to waves of robot bugs
* Created options menu that supports key/button remapping and window resizing
* Generated and implemented various sound effects using Audacity

PERSONAL PROJECTS

**Solo Engine Developer** May 2021 – present

enginebyebba –C++ custom engine

* Developed component-based custom engine in C++
* Implemented graphics via OpenGL to render meshes using shaders and textures read from files and abstracted its low-level functionality from the user
* Integrated Dear ImGui to allow users to edit engine and gameplay variables during runtime and save/load these values to/from JSON files