

# Emma Cross

Software Engineer, Game Programmer

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## SKILLS

PROGRAMMING LANGUAGES	ENGINES	LIBRARIES	SOFTWARE
<b>C++</b> (proficient)	<b>Unity</b> (familiar with)	<b>OpenGL</b> (intermediate)	<b>Visual Studio</b> (proficient)
<b>C</b> (proficient)	<b>SFML</b> (intermediate)	<b>Lua</b> (beginner)	<b>Audacity</b> (intermediate)
<b>Java</b> (intermediate)			
<b>JavaScript</b> (intermediate)			

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## EDUCATION

**BS in Computer Science in Real-Time Interactive Simulation**  
DigiPen Institute of Technology, Redmond WA

Expected Grad April 2024  
3.6 cumulative GPA

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## 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
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## PERSONAL PROJECTS

### **Engine Developer & Gameplay Programmer (Solo)**

May – August 2021

temtris – *Tetris* Clone (C++ custom engine using SFML)

- Developed game using custom engine in C++ with SFML for low-level graphics support
- Supported saving/loading state of Systems and GameObjects that are also modifiable via JSON files
- Designed *Tetris* simulation using a 2D array that is converted to modern graphics