

# Logan Thatcher

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## EDUCATION

California Polytechnic State University, San Luis Obispo

**Bachelor of Science, Computer Science**

March 2021

Concentration: Interactive Entertainment

GPA: 3.3

## RELEVANT COURSEWORK

**Games:** Game Design, Artificial Intelligence, Game Development, UI Design and Development

**Graphics:** Real-Time 3D Computer Graphics Software, Intro to Computer Graphics

## SKILLS

Proficient developer with **Unity** and **Unreal Engine 4** game engines

Extensive experience using **C**, **C++**, **C#**, **Java**, and **Python** in complex 1000+ line programs

Collaborated in teams of various sizes with diverse skill sets and backgrounds

Strong skills in **linear algebra**, vectors, matrices & trigonometry using **OpenGL** to render games

Understanding of **Maya** and **Blender** to create simple 3D models used in my games

Working knowledge of **Git**, **Travis CI**, **Maven** and **SonarQube**

## GAME PROJECTS

These selected projects, including 2 shipped games, highlight my ability to design and implement gameplay using my knowledge of C#/C++ and 3D math

### Island Royale Showdown

- Developed in Unreal Engine 4
- Published on Steam
- A multiplayer first person shooter battle royale style with adaptive AI teammates

- Independently developed: 7000+ downloads, 3000 hours played
- Devised AI teammate system based on a behavioral tree structure that adapts to better support the players' playstyle
- Utilized client/server architecture to create multiplayer stability
- Built a diverse 3D environment enhanced by sound, animation, and character motion with an informative UI and HUD
- Streamlined aspects of development with UE4 blueprints

### Robo Revolution

- Developed in C++ & OpenGL
- A 1v1 first person shooter with an XCOM style overview and turn system

- Collaborated with 4 team members
- Programmed directly with the OpenGL API for rendering
- Used GLSL for FX shaders to create motion blur, depth of field, artificial distortion, and reflections
- Implemented multipass rendering for shadows and transparency
- Applied rendering optimizations: view frustum and back face culling
- Created visual debuggers to verify the performance of optimization

### The Legend Of Kyle

- Developed in Unity
- Published on Kongregate
- An isometric dungeon crawler with shoot 'em up (shmup) elements

- Led project design as part of a 6 person team
- Coordinated integration and worked with teammates debugging
- Developed a system of tools to efficiently create a large variety of AI enemies with minimal code repetition
- Designed a combat UI including pixel art icons and a minimap
- Enhanced the game with particles, lighting effects, and sounds

### StoutKeep Tactics

- Developed in Unity
- Digital Strategy Board Game

- Prototyped several designs for a strategic digital board game
- Iterated and balanced through rounds of user testing
- Reflected on feedback to better incorporate user perspectives