

# Tate Maguire

[linkedin.com/in/tate-maguire](https://www.linkedin.com/in/tate-maguire)

[github.com/tatemaguire](https://github.com/tatemaguire)

## Education

### University of California, Santa Cruz

- 3<sup>rd</sup> year pursuing a B.S. in Computer Science:  
Computer Game Design; Minor in Electronic Music
- Graduating June 2027
- GPA: 3.95
- Courses: Data Structures & Algorithms, Computer Systems & C Programming, Assembly Language, Game Dev Experience, Game Dev Patterns, Foundations of Game Design, Game Systems Design, Electronic Music Synthesis, Linear Algebra, Discrete Math, Calculus.

### Los Gatos High School

- Graduated June 2023
- GPA: 4.14
- 6 AP classes including Physics C: Mechanics (5/5)

## Experience

### iD Tech

#### Coding and Game Design Instructor

June 2025 – Aug 2025 (2 months)

- Taught fundamental Python programming concepts to students using individual and group lessons
- Guided students through the process of game design and game mechanic implementation
- Challenged advanced students with topics such as physics simulation and data structures
- Consistently received positive reviews from parents
- Inspired students to pursue STEM careers
- Carefully handled conflicts between students
- Presented class progress to the CEO of iD Tech and the CEO of Battlebots, Inc.

### Game Design and Art Collaboration Club

#### Programmer

Sep 2023 – Now (2 years)

- Designed and implemented UI systems and fixed scene transitions, ability implementations, and VFX for our recent project *Well-Witches* using Unity/C#
- Implemented custom camera movement for our 2024 Mock Studio game *Malisense*
- Practiced the development cycle of 2-week sprints, vertical slices, playtesting, launching, etc.
- Worked with a group of programmers to design technical systems
- Pitched the game *Comic Chaos* at the club's Pitch Night event in the fall

## Projects

### Tiny Renderer (August 2025)

- Implemented a 3D rendering API in C++
- Used Bresenham's line algorithm and Barycentric coordinates to draw lines and triangles on screen with UV texture mapping and flat shading
- Applied linear algebra to implement perspective projection for accurate rendering of 3D models

### Puzzle Game "Ghost" (July 2025)

[lexaloffle.com/bbs/?tid=150524](https://lexaloffle.com/bbs/?tid=150524)

- Developed a minimalistic puzzle game in Pico-8
- Carefully crafted interesting and evolving puzzles
- Custom built a particle system as a main game mechanic with complex movement behaviors
- Submitted to the Uni Game Jam 2025

### 2D Platformer "Pink Yellow Swaparoni" (June 2025)

- Solely developed a game using Phaser.js, a JavaScript game development framework
- Designed and implemented an expansive world for players to explore and discover unique abilities
- Finely tuned player movement to make controls feel natural, snappy, and responsive
- Received feedback from playtesters and implemented changes to improve the game
- Synthesized custom sound effects using VCV Rack

### Audio Visualizer (October 2024)

- Used Python and Pygame to create a program that takes in an audio file and generates a graphical visualization of the sound
- Applied digital audio processing concepts
- Created a butterworth low-pass and high-pass filter

## Skills

**Languages:** C#, C++, JavaScript, Java, Lua, Python

**Game Engines:** Unity, Godot, Pico-8, Phaser.js

**Graphics/Math:** 3D rendering pipelines, perspective projection, OpenGL shaders, linear algebra

**Dev Tools:** Git, VS Code, command line

**Audio Tools:** Ableton Live, Max MSP, VCV Rack

**Soft Skills:** Adaptability, communication, attention to detail, problem-solving, organization

## Interests

### Electronic Music

- Pursuing a minor in Electronic Music at UCSC
- Audio engineering and production
- Sound design and foley recording

**Other:** Piano, Dance, Musical Theater, Pixel Art