Zachary A. Petersen

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Languages

- C++
- C#
- JavaScript
- Python
- Java
- HTML / CSS

Software

- Visual Studio
- Unity
- Git
- Blender / Maya
- Photoshop

School

UC Santa Cruz
B.S. Computer Science:
Computer Game Design

- Game Engines
- Game AI
- Graphics Programming
- Linear Algebra
- C++ Programming

Univ. College Cork
Semester Abroad in Ireland

- Parallel Programming
- Computational Theory
- C for Microcontrollers

Projects

Flora - (PC 3D Adventure Video Game) - **Project Lead**
January 2017 - June 2017 - *9 Programmers, 3 Musicians, 2 Artists* - playflora.com

- o Oversaw engineering team, planned weekly goals to meet deadlines. Delegated tasks to team members.
- o Built the player controller. Wrote the physics to handle different forms of player locomotion such as running, jumping, surfing, sliding.
- o Prototyped player abilities. Utilized playtest feedback to iterate on abilities. Polished final versions of abilities.
- o Built the camera controller. Added the crosshair and implemented functionality to determine where projectiles should aim when shooting in third person perspective,
- o Built custom shader with multiple layers of effects and easily tunable values. Added global fog effect that utilized Unity's color gradient editor.
- o Designed/Created game's webpage. Painted, rigged, and animated the logo on the home page. Set up the website's server on Google Compute Engine.
- o Concepted, modeled, rigged, and animated all the characters in the game.

Picar.io - (Web Multiplayer Video Game) - **Programmer**
December 2016 - *4 Programmers* - picariogame.com

- o Proof of concept online multiplayer game built using the very limited Pico-8 Platform.
- o Can handle 64+ players, the largest online game made with this platform to date.
- o Built Python server that updates clients and deployed server on Google Compute Engine.
- o Implemented spatial hashing, reducing amount of data needed to update clients per tick.
- o Implemented seamless add/drop player functionality.

High Frequency Trading - (Web Economics Experiment) - **Programmer**
January 2016 - December 2016 - *5 Programmers, 3 Econ Professors*

- o Built simulated stock market experiment with interactive web page for subjects to use.
- o Implemented centralized intermediate server to collect data and ensure that latency never skewed experiment results.
- o Constructed real time market graphs from scratch using SVG.
- o Incorporated websockets to communicate with external market server.

Positions

Founder - **The Game Bakery**
January 2016 - June 2017

- o Indie game studio formed in Santa Cruz for the creation of "Flora."
- o Interviewed 20+ programmers, recruited final team.
- o Facilitated the flow of ideas between team members, ran design meetings and handled cross discipline communication.

Programmer - **LEEPS Economics Lab**
March 2015 - December 2016

- o Wrote client side of browser-based economic experiments.
- o Demoed projects regularly to the Economics professors and utilized their feedback to ensure projects stayed on point with vision.
- o Mentored two newly hired programmers.