ZACHARY PETERSEN

4516 Montcurve Blvd, Fair Oaks, CA 95628

650-272-0714 ⋄ zacharypetersen@gmail.com ⋄ zachpetersendev.com

EDUCATION

University of California: Santa Cruz   Sep 2013 - Jun 2017
Bachelor of Science, Computer Science: Game Design

University College Cork, Ireland   Aug 2015 - Dec 2015
Semester abroad studying Computer Science

INTERESTS

Parallel Computing, AI, Computer Graphics, Data Driven Design

PROJECTS

Flora Surfing   Nov 2019 - Current
zachpetersendev.com/floraSurfing

Game aiming to inspire player creativity by allowing the user to import external 3D geometry and traverse it with an engaging set of surfing mechanics.

Space Radio   Dec 2018 - Jan 2019
zacharypetersen.itch.io/space-radio

Experimental prototype of *Planet Wars* exploring an alternative form of control. The player interacts with the game using a virtual telegraph which the computer interprets using Morse code.

Dravenwatch   Jan 2018 - Nov 2018
zacharypetersen.itch.io/dravenwatch

Cross-genre prototype created to study player mechanics of the popular and commercially successful games *League of Legends* and *Overwatch*. Work involved the recreation of a character's top down MOBA mechanics into first person shooter mechanics.

Picar.io   Mar 2017
lexaloffle.com/bbs/?tid=30059

Proof-of-concept multiplayer game for the Pico-8 virtual console. It was the first large scale multiplayer game capable of supporting 64+ simultaneous players made for the constrained Pico-8 platform. Worked with three others, was responsible for writing the server. Implemented a spacial hashing algorithm to save bandwidth by ensuring that client only receives updates for nearby objects.

Flora   Jan 2017 - Dec 2017
store.steampowered.com/app/733480/Flora

Free-to-play real time strategy game featuring AI driven agents both commanded by and opposing the player. Game received over 45 thousand downloads from Steam. Served as project lead with a team of nine.

AI Assisted Puzzle Designer   Mar 2016
zachpetersendev.com/AI#puzzleDesigner

Tool used to create levels for *Nathair* (see below). User defines a partial level, then AI generates a set of finished levels that fit the defined constraints.

Nathair
Aug 2015 - Dec 2015

zachpetersendev.com/nathair

Introduced time rewind mechanic to *Snake* shifting its design paradigm from a twitch reaction game to a methodical puzzle game.

Seed
Dec 2014

zacharypetersen.itch.io/seed

A proof-of-concept prototype created to demonstrate that gameplay mechanics can convey a message just like aesthetics. The player gathers resources from the ground to grow a tree, however their ability to succeed is limited by oil contamination from drilling.

RESEARCH

Undergraduate Researcher
Mar 2015 - Jan 2017

Learning and Experimental Economics Projects Lab   *UC Santa Cruz*

- Helped build a web application for testing with human subjects to research behaviors and effects of High Frequency Traders. (cafin.ucsc.edu/research/work_papers/cafin_wp51.pdf#page=14).
- Wrote data visualization module, simulated latency system, and encoder/decoder for NASDAQ ITCH and OUCH protocol.
- Ran data analytics on a database of Steam community market transactions to search for trends that also appear in other modern markets.

Undergraduate Researcher
Sep 2016 - Dec 2016

Generative Art Studio   *UC Santa Cruz*

- Investigated generative art techniques and their applications in environmental conservation advocacy.
- Applied learnings to create generative artworks. (zachpetersendev.com/generativeArt)

TEACHING EXPERIENCE

Programming and Game Development Instructor
Summers 2016 - 2019

iD Tech   *Stanford, UC Berkeley, CSU Sacramento*

- Planned and taught technology based courses to college-bound teenagers from around the world.
- Facilitated seven student developer groups in the creation of Unreal Engine 4 games.

Computer Science TA
Feb 2019 - Oct 2019

The Pegasus School   *Huntington Beach, CA*

- Assisted teachers from a non-technical background with getting kids and teens involved in programming and robotics in the classroom.

Grader/Tutor, Foundations of Video Game Design
June 2016

Department of Computational Media   *UC Santa Cruz*

- Led group discussions on game design principles.
- Supervised group activities, engaged in playtest sessions and provided constructive feedback.
- Graded written assignments covering game design concepts.

PROFESSIONAL EXPERIENCE

Unreal Engine Curriculum Developer   Dec 2019 - Current
iD Tech   *Sacramento, CA*

· Write content that teaches the fundamentals of Unreal Engine 4.

Software Engineer Intern   Jan 2018 - Apr 2018
Roblox Corporation   *San Mateo, CA*

· Investigated and fixed visual bugs on Roblox's Xbox platform, a popular app with over 50 Million monthly active users.
· Built front end of new features such as voice chat toggle.

Creator / Graphics Programmer   Jan 2018 - Mar 2018
Flexible Cel Shader   *Unity Asset Store*

· Created a cel shader with color ramp generation and a preset save/load system to allow non-programmers and non-artists on small indie teams quickly create a stronger sense of atmosphere in their games. assetstore.unity.com/packages/vfx/shaders/flexible-cel-shader-112979

SKILLS

Languages   C++, C#, Java, Python, Lua, JavaScript
Software   Unity, UE4, Visual Studio, Google Compute Engine, Steamworks, Blender, Maya