

THEODORE STRICH

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WORK EXPERIENCE

Radius A.I.

Tempe, AZ

Intern

May 2023-July 2023

- Worked in existing Python codebases with **pandas** to improve data collection and management for machine learning datasets
 - Worked to extensively debug and rework github repos made by a previous team
- Optimized data collection and management scripts using pandas and dynamic programming
- Maintained a wiki for scripts, to provide documentation to other teams
- Produced visualizations of datasets with 900k+ entries and of application performance using **Matplotlib**
 - Script generated simulated convenience store transactions - visualized distribution of products across scenes
 - Visualized improvements at each step to showcase results

Independent Musician

Tempe, AZ / Los Angeles, CA

May 2020-Present

- **Award-winning** classical, jazz, and game **composer**
 - *2023 Sinta Quartet National Composition Competition*
 - *Game Audio Network Guild Scholar*
 - *2024 USC Thornton New Music for Orchestra*
 - *Finalist for 2020 BMI Student Composer Awards*
- Extensive experience as an independent **musician** and **project manager**
- Coordinated and managed ensembles of up to 15 musicians to put on live concerts and recording sessions
- Game and short film soundtracks
 - [A Game Called Paako](#)
 - [BlackNBlue](#)
- Electronic music production, including releasing an experimental solo album:
 - [Valley of the Sun - Theodore Strich](#)



PROJECTS

Pixelguy Fighters

- **Solo-developed** an indie fighting game in **Unity** using **C# scripting**
 - [Pixelguy Fighters by tstrich](#)
- Designed and implemented all functionality of the game - player input, movement, physics simulation, combat mechanics, UI
- Trained a **neural net** using reinforcement learning and **Unity MLAgents** to play the game and integrated this net into the final product as computer-controlled enemy
- Managed a small team of art and music collaborators for the game
 - Ran five recording sessions for the soundtrack with six live musicians
 - Worked with visual artist to create sprites for the game

Other Game Projects

- Participated as programmer and composer for several game jam team projects
 - [Nerfed Noodle](#)
 - [To The Stars](#)
 - [Survivalist Slime](#)
- Developed a mod for Minecraft in **Java**
 - [Cube Elementals Mod](#)



Academic Projects

- Created both **compiler and emulator** using **C++** and **Bison** for a hypothetical simple computer: fifteen 32-bit registers with 3-color graphics
- Recreated seven different modern and retro games in **C++** including Portal, the original Super Mario Bros, Pac-Man, Frogger, and Pong
 - Used **SDL** and **OpenGL** libraries
- Created a **REST Server** with a database of movies from IMDB data
- Set up and ran an **SQL database** and server for OpenTibia

TECHNICAL SKILLS

Programming Languages - C++, C#, Python, Java

Optimization - Multithreading, Profiling, Custom Memory Allocation, advanced C++

Data Management - Python pandas, Matplotlib, SQL, REST Web Servers, compression algorithms, experienced using Linux command line interface and ssh to run remote servers

Game Programming - 2D/3D graphics and rendering, physics simulations, experience in Unity Engine and SDL, accustomed to working with a tight performance budget and hardware limitations

EDUCATION

University of Southern California

Los Angeles, CA

Bachelors of Music in Composition / Minor in Computer Programming

August 2020-May 2024

GPA - 3.89

Relevant Classes: Professional C++, Video Game Programming, Data Structures in C++, Object-Oriented Programming in Java