Fred Pan

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Education Los Angeles, CA

University of Southern California August 2021-May 2025

USC Viterbi School of Engineering

Bachelor of Science, Computer Science (Games)

Relevant Coursework: Data Structures and Object-Oriented Design, Discrete Methods in Computer Science, Game Design Principles and Prototyping, Linear Algebra and Differential Equations, Upper Division Calculus, Video Game Programming, Principles of Software Development, Introductory and Advanced C++, Website Development

Relevant Skills: C++, Java, C#, HTML, CSS, Unity, MySQL

Portfolio Links: https://fluffyfred.github.io/, https://uscwebdev.github.io/itp104-submissions-fluffyfred/

Unity Video Game Prototypes January-Present 2024

Spent 10+ hours per week and used C# and Unity to design and implement weekly video game prototypes with teammates. The prototypes have simple shapes but are highly playable and possess fluid game feels.

Technical skills involved (including but not limited to): collision detection and handling, prefab, NavMesh, simple AI implementations, tilemap, 2D animation, and random game object generation.

Visual Studio Video Game Projects August-November 2023

2D Video Games: Pong, Asteroids, Frogger, Mario, Pac-Man, Zelda

3D Video Games: Portal, Mario Kart, Star Fox Tunnel

Spent 15+ hours per week and used C++ and SDL library to design and implement thousands of lines of readable, efficient, reusable, and modularized codes on Visual Studio to remake some classical video games.

Technical skills involved (including but not limited to):

- Game loop basics application
- 2D and 3D collision detection and handling
- Inheritance and polymorphism for game objects
- 2D and 3D camera system and physics simulation
- 2D and 3D audio systems and interactions between game objects
- Vector and matrix math for object movement and transformation
- Basic AI implementations, such as A* search and greedy algorithm
- Synchronous keyboard and mouse inputs, such as leading-edge detection, mouse yaw & pitch

Boardgame Project: *Expedition* April-May 2023

Rules: Players take turns to cross a 3 by 6 tile board. After stepping on 6 tiles safely by facing them up, a player finishes his path, draws 3 trap cards, and warns the next player about the traps by giving indirect and limited hints. The game is won if all players finish their paths without stepping on any traps.

- Co-designed and published a physical boardgame which involves teamwork puzzle-solving on Gamecraft
- Organized in-person meetings with 4 team members for 5+ hours per week
- Discussed and revised the rules 5+ times; playtested 10+ times

Work Experience

Hypergryph Network Technology Co., ltd. Los Angeles, CA

Campus Ambassador July 2023-Present

- Propagated recruitment information to campus communities and reached 1000+ candidates
- Organized an on-campus info session about Hypergryph and its game Arknights for publicity
- Provided intermediary supports between potential employees and Hypergryph