

Aaron Petrek

Gameplay Programmer

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PROFILE

Team-oriented Gameplay Programmer specializing in virtual reality and multiplayer gameplay mechanics. I am always looking for the next challenge that allows me to learn and elevate my skill set to the next level, creating great games along the way.

SKILLS

Skill Set: VR Development, Multiplayer Gameplay, Rapid Prototyping

Languages: C++, C#, Python

Game Engines: Unreal Engine, Unity

Platforms: Meta Quest 2 and 3, Windows, Steam VR

Tools: Git/Github, GitKraken, Visual Studio, Eclipse, Trello, Jira

EXPERIENCE

Self - Game Developer (Space Shift XR)

01/2023 - Present

- Player-Controlled spaceships in mixed reality. Built in Unreal Engine 5, C++, for Meta Quest 3.
- Developed using Meta Mixed Reality Utility Kit for Unreal Engine.
- Deterministic kinematic player controlled ship movement for future multiplayer gameplay.

San Marcos Unified School District, San Marcos, CA - Substitute Teacher (Part Time)

11/2022 - Present

- Math, science, and technology teacher for middle and high school classes.
- Successfully maintain a positive and productive learning environment by clearly communicating with students and faculty.
- Demonstrate exceptional adaptability by adjusting lesson plans and teaching strategies to accommodate different student learning styles, schedules, and classroom dynamics.

Self - Game Developer (Curveball)

01/2023 - 11/2023

- Developed a competitive multiplayer VR ball-and-paddle ESport for location-based VR arcades. Built in Unity, C# using OpenXR and Mirror Networking.
- Developed client-side prediction for physics-based ball movement for competitive multiplayer gameplay.
- Headless server hosting multiple player matches simultaneously, improving scalability and lowers cost for VR arcade operations and overhead.
- Optimized for Meta Quest 2.

The GRID, Oceanside, CA - Gameplay Programmer (MetaBrush)

01/2022 - 01/2023

- Developed paint stroke replication system using Mirror Networking adding multiplayer gameplay to Open Brush; open-source version of Google's Tilt Brush. Developed with Unity, C#.
- Created model file format for saving collections of player-created paint strokes, allowing players to quickly create new art creations.
- First and third-person spectator system for non-VR participants, creating additional player and spectator interaction.

Self - Game Developer (Dungeon Escape VR)

10/2021 - 01/2022

- Escape room built in Unreal Engine 4, C++, Steam VR.
- Developed player visual blockout system to reduce player motion sickness when attempting to move through walls or blocking collisions.
- Developed an interactable object system to enhance player immersion.

Naval Information Warfare Center, Point Loma, CA - Computer Scientist

10/2019 - 09/2021

- Developed C++ gtkmm application for radio calibration; UDP transport for GPS data over HF radio link.
- Researched and created filters using REDHAWK software-defined radio framework.

Naval Air Systems Command, Point Mugu, CA - Computer Engineer

08/2015 - 10/2019

- Developed software interfacing with telemetry processing equipment and data transport networks in C#/WPF to successfully support high-visibility test events for MDA and RIMPAC.
- Developed C++ dll to deserialize and assemble video frames from real-time missile telemetry to successfully support real-time missile testing.
- Developed Python application to read and process wind data from RESTful API to improve weather forecasting over NAVAIR sea test range.
- Led research team of three to redesign telemetry processing and display networks using TMOIP; new design anticipated future requirements, and reduced costs of extending existing implementation by 40%.
- Awarded "2017 NAVAIR Warfare Center Weapons Division Range Employee of the Year - Engineering Category."

EDUCATION AND CERTIFICATIONS

Embry-Riddle Aeronautical University, Prescott, AZ • BS Computer Engineering

Graduation Year 2015