

Henry Schaefer

software engineer + game developer

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Portland, OR

Work Experience **Software Engineer @ vSpatial** / 2018 – 2023 / vspatial.com/xr

- ★ Worked with a founding team to develop “**The Workspace of the Future**” - a spatial computing platform enabling users to interface with remote PCs in a virtual office environment. Built in **Unity** and shipped across AR, VR, PC, Mac, and Web platforms.
- ★ **Maintained a UI framework** that allowed us to display 2D Unity UI and remote PC streams inside curved and manipulatable worldspace screens.
 - Developed an optimization technique that utilized render textures and custom graphic raycasters to render Unity UI performantly in worldspace. This allowed our app to hit FPS targets and ship on lower end hardware.
- ★ **Collaborated closely with our design team** to implement organization systems for curved screens.
 - “Grabbable” window system that enabled users to move screens and deposit them in various organizers.
 - Resizable carousel to organize screens around a user at various heights and scales.
 - Spherical “taskbar” interface above the user to launch and dock remote PC applications and windows.
 - Expandable slotted “visor” housing minimized screens at forehead level around the user.
- ★ **Maintained a cross-platform input wrapper** that unified input between mouse and keyboard, VR controllers, hand tracked controllers, and pass-through devices.
- ★ Wrote custom **gesture detection** and **precision pointer systems** for hand tracking and VR controllers.
- ★ **Maintained an in-app store** that mediated an evolving set of offers from virtual currencies to subscriptions.

Projects **WONKWARE** / 2018 – present / wonkware.itch.io

- ★ **WONKWARE** is a game studio founded by myself and illustrator Caleb Cutler in 2018. Our games strive for unique aesthetics, satisfying game feel, and mechanics that are easy to pick up but hard to master.
- ★ **SYGYL** / 2023 – present
 - **Utilizes deterministic physics** to create a timeline playback puzzle twist on the casual classic Peggles.
 - Developed a **custom data-driven component system, runtime level editor, and level generator** to rapidly develop and inspire levels. Features an authored campaign and procedurally generated endless mode.
- ★ **Selected Works** / 2018 – 2022
 - “**Bumblebonk**” - Local competitive one-button physics fighting game.
 - “**Loamweaver**” - Tactile local hotseat card game inspired by final fantasy’s tetra master and triple triad.
 - “**Bootleg Swamp Stomp**” - Arcade survival “stomper” with unique twin stick controls and satisfying feel.

Other Projects

- ★ **cigfeel** - Text-based adventure game and dungeon crawler currently in development, built with **C++** and **SFML**.
- ★ **Telophase** - Thesis project at the U of U. Led a group of 15 developers from pitch to shipping on steam.
- ★ **Goblin Bunker Public Access** - Annual livestreamed charity music event. Raised over \$25,000 at 4 events.

Skills

- ★ **Proficient Languages:** C#, C++, HTML, CSS; **Other Languages:** Python, Java, JavaScript, SQL, MATLAB
- ★ **Game Development:** Gameplay Programming, UI Programming, Systems Programming, Character Controllers, Physics, Animation Controllers, Particle Effects, Shaders, Serialization, Editor Tools.
- ★ **Engines & Tools:** Unity, Unreal Engine, SFML, DOTween, NodeCanvas, Rewired Input Plugin, Visual Studio, SourceTree, Git, Android Studio, Sublime Text, Obsidian, Trello, Jira, Yarn
- ★ **Other Tools:** Ableton, Photoshop, After Effects, Premiere, OBS, Blender

Education **University of Utah** / 2014 – 2018

- ★ B.S. Computer Science, Emphasis in Entertainment Arts & Engineering (Game Development)