

Chad McKinney

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PROFILE

Versatile engineer and game developer with a wide range of experience including gameplay programming, engine development, audio DSP, compiler development, systems and narrative design, music composition, and sound design.

WORK EXPERIENCE

2016–Present Senior Lead Gameplay Engineer, Cloud Imperium Games

Star Citizen and Squadron 42 – Developed and supported many player facing multiplayer gameplay features using a highly modified fork of CryEngine/Lumberyard in C++. Features include the interaction system, item health and destruction, the room and atmosphere system, player created missions, energy and power distribution, designer systems for item creation, spline traversal to planetary surface locations, physically moving elevators, inventory, global persistence, server meshing, and more.

Promoted to Lead Gameplay Engineer in 2017 and Senior Lead Gameplay Engineer in 2021. Duties expanded to include managing and mentoring a team of gameplay engineers, coordinating feature development across several gameplay teams, contributing to company wide technology initiatives, and collaborating with game directors and other discipline leads. Additionally, I run the hiring initiative for gameplay engineers in the Los Angeles and Austin studios, conducting interviews, reviewing code, and have secured many new members on the team.

2016–Present Co-Owner, BIT ROT Games

Recursive Ruin – One half of an independent studio that released *Recursive Ruin*, a fractal first person puzzle game published by *Icerberg Interactive*. My contributions include systems and narrative design, audio programming and DSP, music composition, sound design, and writing. Released on Steam, GOG, and Epic Games Store in 2022.

2014–2016 Software Engineer, Zindagi Games

Elder Scrolls Online – UI engineer on a third party team for the ESO console release using Lua, Xml, and C++. Developed console implementations for various systems such as the guild store, looting, character creation, quests, and inventory.

Once the ESO contract ended I moved over to gameplay programming on mobile games using C# and Unity3D. Implemented several gameplay features such as various puzzle mechanics, a recurring rewards and event system, as well as rewrote the audio and music playback system used for all projects in house.

EDUCATION

2011–2016 Doctor of Philosophy, University of Sussex

Music Informatics, Dissertation: Designing Networked Music Interfaces for Live Performance

2007–2009 Master of Fine Arts, Mills College

Electronic Music and Recording Media

2001–2007 Bachelor of Music, University of Oklahoma

Music Composition

PROGRAMMING LANGUAGES

C (99/11), C++ (98/11/14/17/20), C#, HLSL/GLSL, Lua, Python, Unix/Bash, Zig, Haskell

SKILLS

Data Oriented Programming, Multithreading, Linear Algebra, Linux Development, DSP, Programming Language Design

ENGINES, FRAMEWORKS, AND APIS

Unreal 4 and 5, CryEngine, Lumberyard, Unity3D, Vulkan, OpenGL, LLVM

TOOLS

Visual Studio, Perforce, Git, GDB, Optick, Rad Tools Telemetry, CMake, VIM, Valgrind