

Jim Mooney

Principal Video Game Programmer

✉ jimfmooney@gmail.com ☎ 720-745-2244 💼 [linkedin.com/in/jim-mooney-14a6951](https://www.linkedin.com/in/jim-mooney-14a6951)

PROFILE

C++ engineer, focused on physics and engine development

My goal is to eliminate barriers for creation of engaging video games, code is only one tool.

Collaboration across disciplines and teams with clear communication from the high level concepts down to the low level implementations, can be more important than architecting new frameworks.

Optimizing communication, process, work flow as well as optimizing code (CPU/memory/networking bandwidth) In a large code base, debugging, profiling, analyzing data, improving stability and deleting code can lead to more progress than writing new code.

Creating great player and developer experience is the goal, not tech for tech's sake.

PROJECTS

ZeniMax Online Studios

12/2021 – present

Principal Engineer - Unannounced Project - MMORPG, Xbox/PC

- Proprietary In House Engine
- Strongly focused on Data Oriented Design
- C++ Programmer Gameplay and Core Engine, Client/Server Network
- Guided and Mentored Movement programming team
- Memory, CPU Performance, Bandwidth optimizations
- Render Interoperability layer for optimization of populating command buffers for renderer
- Improve stability, assert/log "hygiene" and crash tracking and evangelizing
- Scene graph transform build, modification, and thread scheduling optimizations
- Refactor singletons for safety, speed, robustness, and ease of maintenance
- Specialization of event queue handlers for object oriented systems
- Refactoring of standards for header includes to improve compilation times and eliminate circular dependencies
- Expanding and simplifying engine physics wrappers for Havok to improve ease of use and power while decoupling further from Havok implementation details
- Tracking down sources of thread contention and refactoring to limit frequency
- Track performance, crashes, asserts, logs, for triage and task assignment and education
- Resource load caching and lock free access utility class for reduced lookup and contention CPU costs
- Proof of Concept for logical clock implementation for network synchronization
- Replace entity net transform replication/reconciliation for performance and fidelity

Zenimax Online Studios

11/2018 – 12/2021

Gameplay Physics and Core Engine Programmer

- Creating Proprietary C++ Entity/Component (ECS), multi threaded focused engine
- Prototyped Movement Mechanics in Elder Scrolls Online Engine
- Integrated, Maintained, Upgraded Havok into engine
- Prototyped Movement Mechanics using Havok Visual Debugger since renderer WIP
- Developed Coding Standards And Best Practices for new engine
- Analyzed and integrated multiple 3rd libraries for engine utility methods
- Extended camera, render interoperability, math library minimal viable functionality
- Design/experiment for first pass System/Components for expected gameplay
- Exposing engine to a variety of scripting attempts include C# and AngelScript
- Unit test development and auditing
- Navigation mesh generation calibration, optimization, thread task management
- Standardization of strongly type unit classes to reduce potential errors
- Increased ImGui Overlay coverage to reduce troubleshooting iteration time and visibility for QA and content creators

Wargaming.net

01/2013 – 11/2018

Senior Software Engineer - World Of Tanks, Xbox 360/One, PS4

- C++, Lua, Python porting Windows game to consoles
- Implemented Xbox sessions and unreleased tournament API
- Maintained World Of Tanks for 4 years after launch
- Developed multiple prototypes with in house engine
- Unreal prototype (6 months)

Day 1 Studios

04/2006 – 01/2013

Programmer - F3AR, Fracture, Reign Of Thunder(Beta)

- C++ with in house Object/Component system for multiple games
- Havok Physics
- Peer to Peer Networking
- Voice Chat
- Integrated Lua for scripting

Idol Minds

01/2003 – 01/2006

Lead Programmer - NeoPets: The Darkest Faerie

- C++ in house engine extended
- Add C++ dll "micro threads" for scripting
- New collision engine written to leverage novel render geometry format

Idol Minds

05/1997 – 01/2003

Programmer - Cool Boarders 3, 4, 2001, Rally Cross 2, My Street, Supercross Circuit

- In house engine, including in house Physics, networking, tools(from Maya), general gameplay, project management

University Of Colorado

08/1993 – 05/1997

Research and Teaching Assistant

- Researched and Published paper on lithographic bio-molecular patterning
- Lecture, grade papers, guide laboratory experiments for undergrads

Purdue University

05/1992 – 08/1993

Research Assistant

- Assembly of equipment and programming software for calibration and data gathering for High Energy Particle Detection

SKILLS

C++

C, C++, C++98, C++20

Python, Lua

Tracy, Telemetry, ImGui

Visual Studio

CPU Performance Sampler, natvis, Build Insights, vcperf, Windows Performance Analyzer

RTS Fan

Age Of Empires 2, World of Warcraft 2

EDUCATION

MS - Physics

08/1993 – 12/1995

University Of Colorado, Boulder

BS - Math, BS -Physics

08/1989 – 05/1993

Purdue University