Mathew Tomberlin

AR/VR Developer and Gameplay Engineer

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Portfolio: https://mathewtomberlin.github.io

Summary

AR/VR Software Engineer and Game Developer with 8+ years of experience
AR/VR developer with a specialty in advanced peripherals like tracking gloves, haptic gloves, and XR headsets. I built a haptic VR game that won AWE 2024's Best in Show, I've published a paper about new VR input methods, and I developed a therapeutic game for a PHD thesis. I also present VR demos for investors and conferences and design testing software for AR/VR hardware. Previously, I served as a Korean linguist and signals intelligence operator in the US Marine Corps.

Skills

- **Game Engines**: Unity and Unreal Engine
- **Rendering**: Shaders, Materials, Textures, Lighting
- **Code**: C#, C++, Blueprints, HLSL, OpenXR
- **Gameplay**: Physics, combat, AI, level design
- **AR/VR Hardware** (Oculus, Vive, Index)
- **Hand/Body Tracking** (Magnetic, bend, IR sensors)
- **Optimization and Debugging**
- **3D Modeling & Animation**

Professional Experience

HaptX Inc. **VR Software Engineer** Mar 2022 - Oct 2024
- Shipped a VR game that won AWE 2024's Best of Show that showcased the new G1 haptic tracking gloves
- Shipped AR glove validation software still used by HaptX G1 glove assemblers at Advanced Input Systems (AIS)
- Optimized VR demo framerate by 100% via performance profiling and by debugging engine settings
- Enabled $12 mil AIS investment and a Y-12 partnership by fixing broken tracking sensors for investor demos
- Gave 100+ VR demos to VIPs, including board members, HaptX investors, and ITSEC 2023 attendees
- Lectured to a CalPoly medical technology class on VR, AR, XR, haptics, and digital twins

Tapestry Solutions, a Boeing company **Software Engineer** May 2019 -Mar 2022
- Developed Boeing ESI's internal simulation data processing using Apache Kafka
- Developed the ICODES Load Planner web app via requirements designed by government customers

Undergraduate Researcher **Game Developer** Jan 2017 - Mar 2018
- Shipped Scalebridge, a VR game using an EEG headset, that was presented at VS-Games 2019
  (PDF) Scalebridge: Adaptive Reasoning Proportional Reasoning Game
- Developed Gauntlet, a VR input technique for hand tracking, and published a paper about it at IEEE VR 2017
  (PDF) Gauntlet: Travel Technique for Immersive Environments

US Marine Corps **Korean Linguist and Sigint Operator** Oct 2007 - Jun 2012
- Graduated from DLI, Monterey Bay with fluency in Korean and deployed operating intelligence equipment

Personal Projects

Block Breakout **Open-source UE4 C++ Game** Oct 2018 -Nov 2018
- Unreal Engine 4 game developed with C++ as open-source project hosted on GitHub
  Source Code: https://github.com/MathewTomberlin/Breakout

Open Ocean VR **Immersive Underwater VR Game** Jan 2018 - Apr 2018
- Designed Unity tools for game designers, modeled and animated animals, and coded the creature behaviors
  Non-VR Version: https://gamejolt.com/games/OpenOcean/383524

Just One Night **2017 IEEE VR Gauntlet Technique VR Demo** Jan 2017 - Mar 2017
- VR game with Leap Motion IR hand-tracking as demo of the Gauntlet VR technique, with art from Polish artists
  VR & Leap Motion Version: https://studentgames.itch.io/just-one-night

Education

CSU Monterey Bay **Computer Science B.S. & Game Programming Concentration** Aug 2016 -May 2018