Mathew Tomberlin

AR/VR Developer and Gameplay Engineer

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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**, Character **Rigging** & **Animation**

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

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 and Leap Motion Version: https://studentgames.itch.io/just-one-night

Education

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