Mathew Tomberlin

VR & Game Developer, Software Engineer, Marine Veteran

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Professional Summary

Software Engineer with 8+ years of experience in VR, game, web and app development

I'm a software developer with experience in full stack web and game development and a specialty in advanced peripherals like VR, AR, and haptics. I've published a paper describing a new VR input mode at the 2017 IEEE VR conference, developed a therapeutic game presented at the 2019 VS-Games conference, and built a haptic VR experience that won Best in Show at AWE USA 2024. Recently, I've given product demos for investors and conferences, tested and calibrated haptic gloves, and designed hardware testing software. Previously, I served as a Korean linguist and intelligence operator in the Marine Corps.

Skills

- Unity 3D and Unreal Engine 4 and 5 (UE4/UE5)
  Shaders, Animation, Physics, Particles, Networking
- C#, C++, Blueprints, TypeScript, React, Java, Kafka
- VR Dev (SteamVR, performance, design, haptics)

- Hardware Integration & Testing
- Art & Animation (Blender, Photoshop, Maya)
- Collaboration (GitHub, Jira, Sharepoint, Jenkins, CI)
- Achieving Deadlines with Dynamic Requirements

Experience

HaptX Inc. — Designed award-winning haptic VR demos and did glove testing and calibration   **Mar 2022-Oct 2024**
- Created all elements of 3 out of 4 levels of the G1 haptic glove VR demo that won Best of Show at AWE 2024
- Designed and built a glove validation app for production line assemblers used to test every new glove's functionality
- Lectured on virtual reality, haptics, and digital twin concepts to a CalPoly medical technology class of 15 students
- Gave over 100 VR demos with alpha, beta, and production gloves to board members, investors, and ITSEC 2023 attendees
- Recalibrated Alpha sensors, unblocking investor demos that led to a $12 mil investment by AIS and a partnership with Y-12
- Improved current and future VR demo framerate by 100% using performance profiling and by investigating engine settings

Tapestry Solutions, a Boeing company — Full stack enterprise logistics web app development   **May 2019-Mar 2022**
- Modernized the ICODES Load Planner web app with TypeScript, React, Redux, Java, and REST API
- Founding engineer responsible for the back-end Kafka messaging queues used by Boeing ESI automation

Block Breakout – Open-source C++ hobby game developed in UE 4   **Apr-July 2018**
- Open-source UE4 C++ Breakout-style game to practice C++, blueprints coding, materials, and particle effects
- UE4 project source code available here: https://github.com/MathewTomberlin/Breakout

Open Ocean VR, Capstone project – Educational, immersive underwater PC game   **Jan-Apr 2018**
- Implemented level layout tools in Unity for game designers and animated and coded behavior for marine creatures
- Non-VR version available here: https://gamejolt.com/games/OpenOcean/383524

Scalebridge – VR game designed for PHD thesis on EEG-adapted difficult for ADHD   **Jan-Mar 2017**
- Game described by a PHD thesis & presented at VS-Games conference 2019 that adapts difficulty with EEG headset readings
Conference publication available as PDF here: Scalebridge: Adaptive Reasoning Proportional Reasoning Game

Just One Night, 2017 IEEE VR Demo – VR horror game with the Leap Motion hand-tracking   **Jan-Mar 2017**
- VR horror game with hand-tracking, made as demo of the *Gauntlet* VR technique for IEEE VR with art from Polish artists
- Oculus Rift and Leap Motion version available here: Just One Night by Student Games

US Marine Corps – Korean linguist and signals intelligence operator   **Oct 2007 -Jun 2012**
- Graduated with fluency in Korean from the Defense Language Institute, Foreign Language Center, Monterey Bay
- Deployed with Navy Seals and FBI to install and operate satellite and intelligence equipment

Education

CSU Monterey Bay – B.S. in Computer Science, Concentration in Game Programming   **Aug 2016 - May 2018**
- Taught VR classes, published *Gauntlet* at IEEE VR 2017, built *Scalebridge* for PHD thesis and the 2019 VS-Games conference

Academy of Art University – Studied 3D Art and Illustration   **Jun 2012 - Oct 2013**

Publications

Gauntlet: Travel Technique for Immersive Environments Using Non-Dominant Hand   **2017 IEEE VR**
Available as PDF here: Gauntlet: Travel technique for immersive environments