TIMOTHY FINNEGAN

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PROFESSIONAL SUMMARY

Senior Software Engineer with 10 years of experience architecting real-time 3D systems for public sector, training, and commercial applications. Specialized in game engine development (Unreal Engine, Unity) with proven expertise in technical leadership, system design, and AI/LLM integration. Recently secured **$2M in follow-on funding** through successful AI integration proof-of-concept.

TECHNICAL SKILLS

Languages: C++, C#, Python, Java, TypeScript, Objective-C, bash
Game Engines: Unreal Engine 4/5, Unity (including DOTS)
Infrastructure: Kubernetes, Docker, Jenkins, Git, Perforce, CI/CD
Specializations: Networked multiplayer, deterministic simulation, XR/VR, AI/LLM integration, plugin development
Protocols: Protobuf, gRPC, REST, WebSockets, Langchain
Platforms: Linux, iOS, Android, Meta Quest, ROS

PROFESSIONAL EXPERIENCE

SENIOR SOFTWARE ENGINEER | HIGHERECHELON, INC. | *Jul 2020 - Present*

Army Game Studio - Advanced Systems & LLM Integration

- **Architected LLM integration system for Unity, securing $2M follow-on funding**
- Built production Kubernetes infrastructure with Langchain, reducing inference time by 60%
- Leading Unity training platform maturation after gap analysis secured contract award
- Designed visualization tools reducing content creation time from days to hours
- Implemented automated testing eliminating 15+ hours/week of manual QA

Mobile Baseball Training - Technical Lead (Unity/DOTS)

- Led 4-person team building deterministic baseball simulation with computer vision integration
- Achieved <2cm motion reconstruction accuracy enabling frame-perfect batting analysis
- Architected Unity DOTS system: 240fps simulation with 60fps rendering on mobile

Uncrewed Command & Control Interface - Technical Lead (UE5/iOS)

- Architected networked tactical interface for dual iPad system
- Implemented Protobuf messaging with <50ms latency for mission-critical operations
- Integrated Cesium for terrain streaming maintaining 60fps with 100+ km² coverage

VR Demo Management (Unity)

- Built demo orchestration for NFL Pro Era enabling real-time control of 20+ scenarios
- Created CloudXR streaming client with <20ms latency for wireless Meta Quest demos

XR Research (UE4)

- Developed XR cockpit interface through 12+ iterations with pilot feedback

ICOFT SOFTWARE LEAD | SAIC | *Jan 2020 - Jul 2020*

- Managed team of 5 engineers developing radar training simulations for US Army
- Maintained 100% on-time delivery with zero critical production defects
- Reduced new hire ramp-up from 6 weeks to 3 weeks through mentorship program

ICOFT SOFTWARE ENGINEER | SAIC | *Sep 2018 - Jan 2020*

- Upgraded radar training systems with Spring Boot backend and Java Swing UI
- Ensured training fidelity with latest tactical procedures and doctrine

RESEARCH ASSOCIATE | UNIVERSITY OF ALABAMA IN HUNTSVILLE | *2016 - 2018*

- Developed mixed reality medical training using Unreal Engine 4 and Oculus Rift
- Implemented autonomous navigation for unmanned ground vehicle using ROS/C++
- Supported STEM outreach throughout north Alabama

EARLIER EXPERIENCE

Software Engineer | Luna Navigation Systems (*2016*): Precision landing solution with ultra wideband RF positioning

Research Consultant | UAH (*2014-2018*): Consulting on unmanned vehicle research projects

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EDUCATION

B.S. Computer Science | University of Alabama in Huntsville

KEY ACHIEVEMENTS

- Secured $2M follow-on funding through AI/LLM proof-of-concept
- Led gap analysis resulting in platform modernization contract award
- Reduced content creation time 70% through LLM integration
- Achieved <50ms latency for mission-critical tactical operations
- Built deterministic simulation with <2cm accuracy for frame-perfect replay