

Senior Software Engineer – UE5 / Unity / Desktop / Web / DevOps

www.dakotacardillo.com

Engineering lead with 10+ years of experience in real-time simulations and internal tooling. Scaled CI/CD operations, reduced iteration time, and enforced quality gates with automated regression suites for high-performance C++ and C# applications. Drove cross-discipline delivery in defense/finance/interactive contexts; known for performance triage (CPU/GPU), advanced debugging knowledge, and exceptional communication skills. A driven developer who likes to solve hard technical challenges, resolve team bottlenecks, and lead a shared vision for the future of the company.

Technical Skills

Languages & Engines

- Unreal Engine 5
- Unity 3D
- C++
- C#
- SQL
- Python
- JavaScript

Engine Systems

- .NET
- Slate
- Unreal Insights
- Horde
- Zen Server
- GAS
- VR

DevOps & Tools

- Perforce
- Git
- Jenkins
- Docker
- Visual Studio
- CMake
- Blender

Core Domains

- Real-Time Simulation
- Multiplayer / Networking
- Performance Optimization
- Design Patterns
- CI/CD Systems
- Advanced Debugging
- 3D Rendering

Professional Experience

Senior Software Engineer

Applied Research Associates

2023 – Present

Shipped multiple Unreal Engine 5 projects for military use. Lead a development team for a VR project using bleeding-edge hardware. Initiated new development efforts to improve project and server architecture. Communicated with industry experts to formalize best practices and development procedures across the company.

- **Directed a multi-disciplinary development team on a large-scale UE5 VR project**, coordinating feature delivery across developers, artists, and QA to meet aggressive deadlines.
- **Re-engineered Perforce server and source control workflows** to enable modular project structures and tripled project sync speeds via multithreaded sync.
- **Mentored junior and intermediate developers** on best practices, debugging assistance, and internal technical architecture.
- **Integrated standardized workflows for Unreal Engine development** including Unreal Game Sync, Unreal Horde, Zen Server for DDC, and Perforce workflows for Unreal Engine.
- **Offered knowledge and expertise in regression testing methodologies** by creating a developer presentation on different testing strategies for real-time applications.

Mid-Level Software Engineer

SS&C Advent

2020 – 2023

Worked on frontend and backend projects with various teams for the Black Diamond web application. Combined software and financial expertise to maintain tools for calculating cost-basis, re-balancing, and asset reconciliation.

- **Developed backend services in C# with complex SQL queries** to reconcile cost-basis data across large client databases for use in frontend financial reporting tools.
- **Implemented new custodial interfaces for our daily reconciliation engine** to handle bulk transaction data for thousands of clients.
- **Created an encryption system for tax IDs** that allowed financial firms to track taxable account information across portfolios without compromising personally identifiable user data.
- **Developed a strong understanding for web technologies and frameworks** including React/Redux, Docker, and database management, having no prior knowledge beforehand.

Served as a Software Development Lead and Scrum Master for Boeing's 737/P8-A and AH6i aircraft virtual maintenance trainers. Coordinated with cross-functional teams to design and implement software solutions, define and understand project requirements, and identify performance improvements in our products and workflow.

- **Assisted in leading a cross-functional development team as a Scrum Master** by defining task requirements, contributing to software design, managing team priorities and metrics, and coordinating with other teams.
- **Lead an effort to improve testing and regression analysis strategies** by developing an automated frontend regression testing suite to identify, record, track, and validate discrepancies within various simulation projects.
- **Optimized team workflow and eliminated development bottlenecks** by creating software tools to automate common tasks for artists and software engineers such as prefab loading, object selection, and asset search.
- **Acquired extensive domain knowledge in aircraft systems** to implement various features for our Boeing 737 maintenance trainers — Including flight control systems, MCP programming, and hydraulics.

Responsible for designing, documenting, implementing, and testing software used to simulate aircraft maintenance training procedures for commercial and military use. SSE is a sub-contractor for The Boeing Company.

- **Designed and implemented a procedural animation system** for simulating realistic mechanical movements for various aircraft components such as flight control systems for airplanes and helicopters.
- **Built low-latency interactive streaming framework inside Unity using VNC**, optimizing frame delivery and bandwidth for virtual training simulations.
- **Lead a software demo for the FAA** to exhibit light-weight virtual trainer capabilities using 360-degree images and embedded media playback including videos and XML file support.

Personal Projects

FPS Camera System

Unreal Engine 5, Blender

2025

A work-in-progress Unreal Engine FPS game using the Lyra starter project. I adapted the camera system to mimic a Destiny-style first-person camera to show the character's legs while minimizing camera clipping. Using Blender, I split the UE5 mannequin into parts that can be spawned individually, laying the foundation for an armor swapping system.

Home Server for Unreal Horde

Proxmox, Unreal Horde

2024

I repurposed an old desktop PC into a local Proxmox server running virtual machines for Windows Server 2025 and Ubuntu Server. These VMs host Unreal Horde and Perforce respectively, with other PCs in my home running as Unreal Horde Agents. Using a private VPN, I can commit changes to my Perforce server from anywhere in the world, triggering an incremental build with Unreal Horde, which distributes the work across all agents on my home network using Unreal Build Accelerator (UBA). I configured Proxmox to use GPU passthrough for the Windows server, enabling automated play-in-editor (PIE) tests for Unreal Engine, which are triggered by Unreal's Build Graph system.

Cell Counter (PC)

C++, OpenCV

2017

An image processing program using C++ and OpenCV to count neurons within images of G-CaMP expressed cells. Using image filtering techniques and color analysis algorithms, the program was able to accurately highlight the cells within the images as an overlay, while presenting information for the number of cells between user-defined boundaries.

Education

B.S. in Game Development

Full Sail University

2016

- **Course Director's Award** earned in **Windows Tools Programming** and **Game Engine Development**.
- **Completed an accelerated B.S. degree in only 21 consecutive months** – a total of 140 credits earned.