Benjamin Emag

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LinkedIn · Portfolio Website

Systems focused game programmer with experience in performance optimization, simulation, and scalable architecture

EDUCATION

Champlain College Burlington, VT
B.S. Game Programming, Minor in Computer Science *Expected May 2026*

Dean's List: Spring 2023 – Fall 2025
Relevant Coursework: Software Design Patterns, Game Architecture, Advanced Game AI, Computer Architecture, Data Structures & Algorithms, Database Management

TECHNICAL SKILLS

Languages: C++, C#, Java, SQL, HLSL/GLSL
Engines & Tools: Unity, Unreal Engine 5, .NET, OpenGL
Development: Git, SVN, Jira, Confluence, Agile/Scrum
Specializations: Gameplay Systems, Software Engineering, Performance Optimization, ML-Agents

EXPERIENCE

Leahy Center for Digital Forensics & Cybersecurity Burlington, VT
Software Engineer Intern *Summer 2023*

- Developed and maintained .NET applications in C# using MVVM architecture
- Implemented new features and refactored existing code to improve modularity and maintainability
- Debugged and resolved issues across UI and application logic layers in a shared codebase
- Collaborated with researchers and engineers to translate requirements into internal tools for government clients

PROJECTS

Lead Programmer – Fincremental (Capstone) 09/25 – Present
Unity, C#, Incremental OS Simulator, Team of 12

- Architected core systems for OS simulation including window management, upgrades, and persistent saves
- Developed modular mini-game framework allowing designers to easily integrate new content
- Applied SOLID principles throughout codebase ensuring maintainability and extensibility

Solo Developer – Monte Carlo Poker Evaluator Fall 2024
C++, Algorithm/Simulation, Personal Project

- Built SIMD-accelerated hand evaluator (SSE/AVX), achieving 1.5x speedup over scalar baseline
- Optimized to execute millions of Monte Carlo simulations with low-level CPU optimization

Solo Developer – Autonomous Flight Simulator Fall 2024
Unity, C#, ML-Agents, Simulation, Personal Project

- Engineered custom flight physics using composite colliders to simulate aircraft dynamics
- Trained neural network with Unity ML-Agents for autonomous takeoff and landing

Lead Programmer – P.I.N.G 01/25 – 05/25
Unreal Engine 5, First-Person Horror, Team of 12

- Developed custom echolocation shader with UV-independent rendering for seamless mesh application
- Engineered shadow masking system to exclude shadowed geometry from visualization
- Collaborated with designers to tune visual parameters for gameplay readability

Programmer – Moai Mayhem 01/24 – 05/24
Unity, C#, Educational Adventure, Team of 6, Published on Itch.io

- Implemented player movement system integrated with rigged 2D character animations
- Designed and placed collectible Moai statues throughout game environments