Jay Blankenship

1128 Cary Rd, Algonquin, IL 60102 • (815) 347-4790
Jayblankenship@outlook.com

Professional Summary
Innovative software engineer with a Master's in Machine Learning and Artificial Intelligence and over two years of professional experience building high-performance AI-driven systems. Expert in C++, Python, and neural network implementation. Skilled in reinforcement learning, algorithm optimization, and solving complex technical challenges.

Technical Skills

- **Programming Languages**: C++, Python, C#, Java, SQL, Perl, Javascript, HTML, css/xml, F#, PHP, Kotlin
- **AI/ML Technologies**: Neural Networks, Reinforcement Learning, Q-Learning, Markov Decision Processes, TensorFlow, PyTorch
- **Development**: Unreal Engine 5 (5.2–5.5), Scripting, AI/NeuralNetworks, Procedural Content Generation, Neural Network integration, Mobile Development, Shell scripting, Linux, Databases
- **Tools & Platforms**: Visual Studio, Git, Perforce, Linux, AWS, Docker, Google Analytics 4
- **Technologies**: Multithreading, Network Programming, Shader Development, 3D Math, Data Pipeline Automation
- **Methodologies**: Agile (Scrum/Kanban), Code Reviews, Debugging, Performance Optimization

---

Experience
Robs Complete Automotive (Contractor)
Solution Architect | 9/2024 – 7/9/2025

- Utilized computer engineering skills to develop & maintain Revenue and Profit based reports.
- Setup integration between shop management tool and web-based scheduling application.
- Created, and analyzed Google Analytics for shop owner's website.
- Educated shop owner and shop management on transformational processes and procedure development.

Professional Experience
Centuria (Contractor for National Oceanic and Atmospheric Administration)
Scientific Applications Programmer / Database Administrator (Security Clearance)
Stennis Space Center, MS | 8/2022 – 8/2024

- Engineered a high-performance file retrieval system in C++ and Java, transitioning from FTP to HTTPS, reducing bandwidth usage with optimized hashmap-based algorithms.
- Automated large-scale data pipelines using Python and SQL, integrating netCDF datasets into databases, cutting processing time and ensuring data integrity for HFradar archives.
- Optimized real-time system performance with multithreaded C++ modules and enhanced Linux cron jobs, increasing update frequency for mission-critical applications.
- Debugged complex system integration issues in C++, resolving asciiId errors, correcting and improving data processing efficiency.
- Led migration of four websites to Google Analytics 4, improving user engagement metrics through seamless data tracking.

Work Experience
Walmart
Sales Associate and Automotive Technician | 7/2015 – 8/2022

College AI and Game Development Senior Projects
3D Snake Game with Neural Networks

Jay Blankenship

1128 Cary Rd, Algonquin, IL 60102 • (815) 347-4790
Jayblankenship@outlook.com

Unreal Engine 5.2, C++ | Published on itch.io: https://jayblankenship.itch.io/snake3d | 2023

- Developed and published a 3D Snake game featuring neural network-controlled NPC snakes, achieving an excessively high win rate that increases as time goes on in simulated environments using Q-Learning and Neural Network implementations.
- Optimized reinforcement learning algorithms, reducing computation time through efficient data structures, parsing and tokenization.
- Integrated real-time performance monitoring, enhancing gameplay responsiveness.
  Portfolio: https://github.com/JayBlankenship

Open-World Multiplayer Networked Survival Game
Unreal Engine 5.2, C++, Blueprint, SQL | 2023 – 2024

- Designed AI-driven gameplay mechanics and character behaviors in C++ and Unreal Engine 5.2, reducing input latency through code optimization.
- Implemented networked multiplayer features with a SQL-backed database and Kotlin API, achieving reliable real-time data synchronization.
- Optimized build configurations and resolved preprocessor macro errors, enabling Live Coding and reducing iteration time.
  Portfolio: https://jayblankenship.github.io/

WebGL/OpenGL 3D Graphics Demo
WebGL, OpenGL, JavaScript | 2022

- Created interactive 3D rendering applications with Phong and Gouraud shading, optimizing shaders to improve frame rates.
- Implemented camera movement and hierarchical transformations, enhancing rendering efficiency and user interaction.
  Portfolio: https://www.youtube.com/watch?v=tDC5uYWP46Y

Education

M.S., Machine Learning and Artificial Intelligence
University of Illinois at Chicago, College of Engineering | 7/2023 – 12/2024
Relevant Coursework: Deep Learning, Reinforcement Learning, Large Language Models
B.S., Computer Science
University of Illinois at Chicago, College of Engineering | 5/2017 – 12/2021
Relevant Coursework: Algorithms, 3D Graphics Programming, Data Structures
Prerequisites
Elgin Community College

Additional Achievements

- Published AI-driven 3D Snake game on itch.io (https://jayblankenship.itch.io/snake3d), showcasing neural network implementation for NPC behavior.
- Developed an optimized Unreal Engine 5.2 project, leveraging Live Coding tools to streamline Networked InventorySystem code development, achieving a reduction in iteration time and establishing a robust system architecture for the inventory.
- Automated National Oceanic and Atmospheric Administration data workflows, saving hours annually in manual processing.
- Recognized by National Oceanic and Atmospheric Administration administrators for resolving critical data inconsistencies in mission-critical systems.