

Seth Wright

Cumming
GA

seth.wright0117@gmail.com
(470) 272 3156
www.linkedin.com/in/seth-wright-tech

EDUCATION

Georgia Institute of Technology , Atlanta, GA
Bachelor of Science in Computer Science

May 2026

Relevant Coursework: Computer Graphics, Video Game Design, Procedural Content Generation, Systems and Networks, Advanced Computer Organization, Internet Systems and Services

TECHNICAL SKILLS

Programming Languages: C++, C, C#, Python, Java, JavaScript; Game Engines & APIs: Unreal Engine (C++ & Blueprints), Unity, OpenGL; Tools: Git, Docker, Linux, CMake, Visual Studio, Unity Profiler; Core Competencies: Object-Oriented Programming (OOP), Memory Management, Procedural Content Generation (PCG), Rendering Pipelines, Data Structures, Physics Engines, Game AI, Inverse Kinematics, GLM, PhysX

EXPERIENCE

Intern, M.C.Dean I2CS group

May 2023 - Aug 2023

- Executed rigorous quality assurance testing on network infrastructure, identifying failed terminations and preventing **100%** of potential rework during server room installations.
- Optimized project Bill of Materials (BOMs) by identifying alternative suppliers and leveraging existing stock, resulting in significant cost savings and accelerated documentation.
- Analyzed technical blueprints to extract critical cable and distance data, informing accurate material purchasing for large-scale infrastructure projects.
- Streamlined project communications between distributors and management, ensuring informed decision-making and **100%** on-time material availability.

PROJECTS AND RESEARCH

Software Rendering Engine (C++)

Present

- Engineered a foundational software rendering engine from scratch in **C++**, implementing a complete graphics pipeline including triangle rasterization and Z-buffering.
- Developed advanced shader-like effects such as normal mapping and shadow mapping to enhance visual fidelity of **3D** game models.
- Implemented perspective projection and back-face culling to optimize rendering performance and ensure mathematical accuracy in **3D** space.
- Resolved complex rasterizer issues through methodical debugging, ensuring correct mesh drawing and preventing visual artifacts like mesh bleeding.

Procedural Spider Animation (Unreal Engine)

Present

- Developed a robust procedural animation system in Unreal Engine using Blueprints to master advanced animation programming principles.
- Implemented multi-legged Inverse Kinematics (IK) where each leg dynamically targets ground positions using vectors and smooth curves for fluid locomotion.
- Engineered terrain-adaptive logic to ensure realistic foot placement on varied surfaces, preventing clipping and floating across complex environments.
- Integrated pelvis speed variables to dynamically scale leg update frequency, enhancing the naturalism of the gait based on movement velocity.

Custom FPS Project (Unreal Engine & C++)

Present

- Developed a fast-paced first-person shooter featuring Doom-inspired movement mechanics, utilizing a **C++** parent character class for high-performance extensibility.
- Architected a **C++** dash and jump system, exposing parameters to Blueprints for iterative gameplay tuning and designer flexibility.
- Implemented a procedural environment system generating floating islands with randomized **3D** spawn points to create vertical, engaging combat arenas.
- Designed wave-based combat AI and gameplay loops, gaining deep expertise in Unreal Engine's physics and animation architecture.

Special Theory (Space Game)

Present

- Led a **5-person** team in developing a unique space-themed puzzle-stealth game in Unity, overseeing core technical architecture and gameplay systems.
- Architected the 'gravity flip' mechanic using custom physics and FixedUpdate-driven animations synchronized with slerp for seamless player transitions.
- Optimized physics interactions by adjusting raycast logic, ensuring stable functionality for jumping and platform riding during active gravity shifts.
- Developed complex alien monster AI and advanced puzzle mechanics, showcasing leadership in managing a multi-faceted game project.

Loop Subdivision & Phong Shading (C++/OpenGL)

Present

- Implemented the Loop Subdivision algorithm in **C++** and OpenGL to refine **3D** geometry, achieving smooth mesh transformations from cubes to spheres.
- Developed a full Phong lighting model incorporating ambient, diffuse, and specular components to render realistic highlights on curved surfaces.
- Debugged vertex placement ratios and geometric processing pipelines to ensure accurate smoothing of complex plane models.

Flocking Simulator (Unity/C#)

Present

- Developed a realistic agent-based AI simulator implementing Boids behaviors: collision avoidance, velocity matching, and flock centering.
- Engineered a custom force calculation system and 'fake fish' perception, allowing the simulation to scale efficiently to **hundreds** of active agents.
- Created **80** custom-designed 'alien fish' with smooth tail animations to demonstrate coordinated, living entity behaviors.

ADDITIONAL SKILLS AND INTERESTS

My passion for creating exceptional player experiences in RPGs drives my interest in robust gameplay system design and implementation using C++. I'm particularly fascinated by procedural content generation, advanced AI behaviors, and optimizing engine performance to build immersive worlds. I thrive on iterative development, problem-solving, and contributing to innovative game architecture that delights players.