Logan Bowers

Software Engineer / Game Developer creating simple, collaborative solutions to complex problems

EDUCATION

Georgia Institute of Technology | Atlanta, GA | BSMS Program

B.S., Computer Science | 4.0 GPA — Expected Dec 2022

M.S., Computer Science with Graphics Concentration — Expected Dec 2023

Relevant coursework: Object-Oriented Design, Object-Oriented Programming, Data Structures and Algorithms, Systems and Networks, Graphics, Machine Learning, Computer Vision, Animation

PROJECTS

Slider | **Team, Gameplay, Tools Engineer, Unity 2D C#** | http://github.com/randomerz/Slider — Jan 2022-present

- Refactored/Debugged 23 kloc codebase using Clean Code, SOLID principles, Observer/Singleton Patterns.
- Engineered lightmap collisions and shaders for 2D tilemap using URP shader graph with custom HLSL nodes.
- Designed optimal algorithms for static and dynamic graph structures using A* and ref counter variations.
- Engineered AI with Behavior Tree, steering, constrained pathfinding, custom navigation agents.
- Collaborated with designers to optimize player experience through frequent playtesting

Graphics Engine | **Individual, OpenGL C++** | https://github.com/Bowers-L/GraphicsEngine — Summer 2019-2020

- Modeled light sources utilizing ambient, diffuse, specular using GLSL shaders with C++.
- Constructed virtual camera using MVP Matrix; Used index buffers to optimize.
- Developed a path finder program using A* to visualize optimal path between points in a nav-mesh.

Blood Favor | **Team, Tech Lead, Tools, Unity 3D C#** | https://github.com/Abnormal202/BloodFavor — Fall 2022

- Implemented pseudo-procedural generation using abstract graph data with randomly chosen room prefabs.
- Created custom tool with UIBuilder and Scriptable Objects for designers to automate integration of level flows.
- Decoupled abstract graph flows from placement of rooms using Strategy pattern.
- Refactored generation system to use custom exceptions when generation fails and reduce possibility of failure.

Beam | **Team, Project Lead, Unity 3D C#** | https://github.com/Bowers-L/Beam — Fall 2021

- Led 6-member team with a pipelined level design approach involving ideation, sketches, greyboxing, balance.
- Designed and implemented core gameplay using raycasts, physics, and event systems (publisher-subscriber).
- Constructed visual effects using HLSL graphs in HDRP, and Photoshop.

One Way Out | **Individual, GBA Custom C** | https://github.com/Bowers-L/OneWayOut-GBA-Final-Project- — Spr 2020

- Employed dynamic memory allocation with raw pointers in C to manage game object data.
- Devised rendering technique for backgrounds by loading off screen textures with DMA (Direct Memory Access).
- Used hardware interrupts to implement sound by using DMA to sampled sound bits into special registers.

WORK EXPERIENCE

Scientific Software Development Intern, C++, Project IDASS | **Stellar Science** — Summer 2021

- Maintained, debugged, refactored large-scale C++ system using best practices.
- Contributed to collaborative Agile Software Development environment with Unit Testing and CI/CD Practices
- Iterated on company mockups to implement image batch processor UI in QT with File I/O

SKILLS

- **Programming** | (proficient) C#, C++, C, Java (working) Rust, Python, JS/TS, GLSL, HLSL
- **Game Engines** | (proficient) Unity (working) Unreal, Game Maker, Godot
- **Industry** | Software Engineering, Agile, OOD/OOP, Test Driven Development (TDD), Unit Testing, CI/CD
- **Tools/APIs** | (proficient) Git Bash/Github, Trello (working) Perforce, OpenGL, React (Native)
- **Other** | (proficient) FL Studio (working) Photoshop, Blender

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