Benson Haley, Software Engineer

CONTACT

Email Address: bah8454@rit.edu
Website & Portfolio: bensonhaley.com
Mobile Phone: (518) 429 1625
GitHub: github.com/benson-haley
LinkedIn: linkedin.com/in/benson-haley

EDUCATION

Rochester Institute of Technology, Master of Science in Computer Science – 4.0 GPA *Expected 2025*
- Thesis introducing Procedurally Textured Gaussian Splatting

Rochester Institute of Technology, Bachelor of Science in Computer Science – 3.94 GPA *2021 - 2025*
- Minor in Theatre Arts

EXPERIENCE

Software Engineer, Distributed Logic – Remote *2023 - 2024*
- Developed secure RAG-based AI Assistants using Python, Azure AI, Azure Entra ID, and Okta, enforcing HIPAA compliance by restricting retrieval based on user credentials.
- Built metadata extraction and QA validation tools using TypeScript, SQL, and PowerShell to support hundreds of TBs of file migrations across SharePoint, Google Drive, and Egnyte.
- Automated migration validation during a major pharma merger by applying a Levenshtein distance fuzzy comparison solution, reducing manual review time from weeks to hours.
- Delivered intuitive UIs for all of the above solutions with SPFX extensions written with TypeScript and React.

Lead Engineer, Body MoCap Team, Virtual Production Project – Rochester, NY *2024*
- Led the body motion capture team for a low-cost VR framework, designing workflows mapping sensor data from actor movements to skeletal meshes with inverse kinematics, using Unreal Engine and C++.
- Contributed networking solutions to expand the use-cases of the framework.

PROJECTS

Enabling Bleeding-Edge Data Reflection in Godot *2025*
- Implemented a C++26 data reflection API in the Godot Engine to facilitate compile-time efficiency, code decoupling, and ease-of-use.

Hardware-Agnostic Accelerated Raytracer *2025*
- Designed and implemented a GPU-accelerated raytracer in C++ using SYCL (AdaptiveCPP) to offload rendering and achieve real-time performance.

Londronic Tapestry *2025*
- Built an interactive musical experience using Godot in collaboration with the Royal College of Music for a concert installation in London.
- Enhanced user interaction with GLSL shaders, improving clarity and immersion.

Web-Scraping Extensions *2022*
- Developed an extension to scrape RPI SIS information into JSON data so advisors can create visual aids and perform statistical analyses.

Game Hacking *2020 - 2021*
- Modified New Super Mario Bros Wii using C++ and PowerPC Assembly to inject custom actors and enable advanced level design with dynamic physics colliders. Additionally built a Python tool to aid data conversion to packed 16-bit floats, facilitating optimized performance under tight engine constraints.

SKILLS

Languages & Tools: C++, Python 3, TypeScript (& JavaScript), C, C#, SQL, React, Vue, Azure
Rendering & Parallelism: CUDA, SYCL, Vulkan, OpenMP, GLSL, Godot, Unreal Engine
Coursework: ML Systems Implementation, ML for Difficult Data, Global Illumination, Computer Vision
Other: Professional theatre (acting & projections), including with former RIT President Dr. David Munson