Edward (Eddie) Hatfield

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Education

Tufts University, School of Engineering Boston, MA

Bachelor of Science in Computer Science *August 2019 – May 2023*

- GPA: 3.63, Dean's List Fall 2019 – Present
- Relevant coursework: Data Structures, Algorithms, Computer Architecture and Assembly, Numerical Linear Algebra, Convex Optimization, Calculus III, Discrete Mathematics, Set Theory, Computation Theory, Software Engineering

Work Experience

Stellar Science Ltd. Co. Albuquerque, NM

Software Developer Intern *June 2021 – August 2021*

- Fixed fatal crashes in core sections of the Qt/C++ codebase
- Built a new utility in our codebase for interfacing with a third-party tool safely and easily. I then used this library to create a feature for identifying satellites against a starry background in low-resolution images

Discover Technologies Cincinnati, OH

Summer Intern *June 2019 – August 2019; April 2020 – August 2020*

- Created a mobile version of our flagship desktop app using the ServiceNow platform weeks ahead of schedule
- Presented the app and took questions from customers in sales meetings
- Wrote JavaScript components for tracking the user's page navigation and displaying other components in a pop-up panel

Personal Projects

Plume | *Haskell, Compiler Design, Intel x86-64 Assembly* View on GitHub

- Wrote an ahead-of-time compiler in Haskell for a strongly, statically typed programming language inspired by my experiences in Scala, Go, C, and other languages
- Features a type-checker, a bytecode generator, and a register allocator. Recent work is on compiling Plume bytecode to x86-64 assembly

EFGL | *C++, OpenGL, Visual Studio* View on GitHub

- Wrote a real-time rendering engine with C++ and OpenGL 4.6 that features an object-oriented material system, model-loading, and a physically based shading model using a Cook-Torrance Specular BRDF based on Unreal Engine 4's implementation
- Implemented a forward-clustered shading pipeline that leverages general purpose GPU compute shaders, allowing for thousands of lights at real-time framerates

Backend for Non-profit's Website | *Python, Django, Cloudinary, Google Maps API*

- Wrote the backend of a web-app in a small team using Django, which included planning and implementing REST API endpoints and integrating those endpoints with third party APIs such as Google Maps and Cloudinary

Technical Skills

- **Programming Languages:** C++, JavaScript, Python, Haskell, Java, C, x86-64 Assembly
- **Frameworks:** Qt5, OpenGL 4.6, GLSL, Django REST Framework
- **Software:** git, vim, bash, GNU coreutils, Visual Studio, CMake, Ubuntu Linux