Edward (Eddie) Hatfield

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EDUCATION

Tufts University, School of Engineering – Medford, MA, **Expected May 2023**

- B.S. in Computer Science
- Cumulative GPA: 3.63
- Coursework: Set Theory, Numerical Linear Algebra, Data Structures, Algorithms, Discrete Math, Computer Architecture and Assembly, Software Engineering, Convex Optimization, Computation Theory, Calculus III

WORK EXPERIENCE

Stellar Science: Scientific Software Developer Intern – Albuquerque, NM, June 2021 – August 2021

- **Utilized CMake, git, and Visual Studio** in a **C++20/Qt5 codebase** to make **production-ready contributions alongside experienced scientists and engineers** for our aerospace desktop application
- **Created a new library** in our codebase for handling a piece of 3rd-party software in a **memory-safe, foolproof manner.** Made use of this library to **single-handedly fulfill a customer's request** for a feature to **identify satellites in images of star fields**
- Applied knowledge in **linear algebra and computer graphics** to **solve a long-standing bug** regarding 3D model generation

Discover Technologies: Summer Intern – Remote, April 2020 – August 2020

- Assumed the role of a **lone developer** on a small team tasked with bringing our flagship application to mobile using the ServiceNow Now platform, involving **managing a relational database structure and centralizing business logic** to run the same code on both mobile and browser
- **Provided support in sales meetings as a developer** to display our progress to clients; met daily with both sales and requirements engineers to iron out objectives **in a time-sensitive, low-certainty environment**
- Surpassed goal of creating an app purely for demo purposes and instead **fully realized our team's vision well before the deadline with minimal supervision**
- **Wrote company blog posts** detailing what it takes to create a mobile app on the Now platform, along **with tricks and documentation for future maintainers** of the mobile app

Discover Technologies: Summer Intern – Remote, June 2019 – August 2019

- Created widgets that **added functionality** to our client's application, such as a widget that tracks page navigation and a widget that displays other widgets inside a pop-up panel
- **Presented weekly** on progress to the Requirements, Quality Assurance, and Sales teams and **participated in daily scrum meetings**
- Tracked the app's current behavior to update how well the roles and permissions were matching our requirements, then used this data to **create a quick solution in time for our app's release**

SKILLS

- Programming Languages: C++20, JavaScript, Python, Haskell, Java, C
- Frameworks: Qt5, OpenGL 4.6, GLSL, Django REST Framework
- Software: git, vim, bash, GNU Coreutils, Ubuntu Linux, Visual Studio

PROJECTS

Plume (View on GitHub)

- Self-guided creation of an ahead-of-time **compiler written in Haskell** for my own strongly, statically typed **custom programming language** that combines ideas from C, Go, Scala, and other languages
- Created **type unification, scope resolution, bytecode generation, and register allocation steps** in the compilation process. Recent work is on transpiling Plume bytecode to x86-64 assembly

EFGL (View on GitHub)

- Self-guided creation of a **real-time rendering engine** written with C++ and OpenGL 4.6 that **leverages general purpose GPU compute shaders** to employ a **forward-clustered shading pipeline**

ACTIVITIES

JumboCode (Student Consulting Organization) –Developer (Fall 2020-Present)

- Writing the **backend of a web-app** in a small team **using Django**, including **creating a specification** for our **REST API** endpoints and integrating those endpoints with **third party APIs such as Google Maps and Cloudinary**