Thomas **Harmon**

Software Developer · Computer Engineer

Available for Full Time Positions Starting May 2020

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Education

Northeastern University | GPA: 3.85/4.0 — *Boston MA*

Bachelor of Science in Computer Science and Computer Engineering — *May 2020*

Courses: AI, Algorithms & Data Structures, Software Development, Object Oriented Design, Computer Systems, Database Design

Extracurricular: Vice President of Wireless Club, an Electrical Engineering club. Hosted various hackathons and workshops.

Skills

Languages Proficient: Rust, Java, Kotlin, SQL. Familiar: JavaScript, Python, C/C++

Frameworks and Tools React, Elasticsearch, AWS, TensorFlow, Jest, Kotlintest, Git, Docker, Gatsby, ROS

Work Experience

PowerAdvocate — *Boston MA*

Full Stack Software Developement Co-op | React, JavaScript, Java, Elasticsearch, AWS — *July 2019 - Dec. 2019*

- Researched, implemented, and presented database optimizations that increased performance for clients by 5-30x.
- Contributed to redesign of a monolithic web application into a microservice-oriented architecture and monetizable API.
- Developed NodeJS microservice allowing analysts to search by using Elasticsearch, increasing searching accuracy.
- Practiced Agile Development under a Continuous Flow framework, collaborating with other developers by pair programming.
- Created unit and integration tests using Jest to ensure reliability and resiliency of software.

Northeastern University RIVeR Laboratory — *Boston MA*

Undergraduate Researcher | Python, C++, OpenCV, ROS — *Jan. 2018 - July 2018*

- Developed facial recognition and person following packages for the Toyota HSR in a RoboCup@Home competition.
- Placed 4^{th} internationally in a RoboCup@Home competition in Montreal, Canada as part of a team of 6 researchers.
- Researched, built, and tested a prototype autonomous navigation system based on optical flow.

Draper Laboratory — *Cambridge MA*

Advanced Concepts Co-op | Java, ANSYS — *Jan. 2017 - July 2017*

- Created a Java application to translate system engineering models between OpenMETA and sysML.
- Modernized existing file system approach by utilizing a graph database as a single source of truth for system engineering models.
- Integrated database and Java app into continuous integration workflow for engineering models, greatly improving efficiency.
- Utilized ANSYS Electronic Desktop to model operational effects of varying RF wavelengths on a PCB based on trace dimensions.

Technical Projects

LiquidML — *Boston MA*

Distributed Systems, Data Analytics | Rust — *February 2020 - Aoril 2020*

- Created a well-documented crate (docs.rs/liquid-ml) for a distributed, scalable platform for data analysis on data sets too large to fit into memory. Created an API which allows users to easily implement User-Defined Functions and preform their own data analysis without worrying about the complexities of a distributed system or making it extremely performant.
- Implemented decision tree and random forest machine learning algorithms on the platform

Sorer — *Boston MA*

File parsing | Rust — *Jan. 2020 - Feb. 2020*

- Designed and built a high performance, multi-threaded CSV file parser. Infers schema on read based on a probabilistic algorithm.
- Documented (docs.rs/sorer) and published the project with an idiomatic structure and API to crates.io
- Analyzed performance under various circumstances using perf and flamegraphs

gshell — *Boston MA*

System shell | Rust — *Sep. 2019 - Present*

- Implemented a system shell for Unix Platforms using a custom lexer and parser to construct ASTs from user input according to operator precedence. Supports common bash syntax and operators such as pipes, redirects, boolean logic, etc.

Personal Website — *Boston MA*

Web Development | React, JavaScript, HTML, CSS, Gatsby — *July 2019*

- Designed and developed a responsive website to display personal projects and a professional resume.

Interests: Glassblowing, surfing, reading

Last Updated: April 2020