Emory Mears

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An innovative software engineer with a passion for computers and modern and simple programming. She is well rounded with experience, determined to provide insight to create efficient and functional code, and learn some new concepts on the way there.

Skills

C++, C, Rust, Java, Python, POSIX, Bash, TypeScript, JavaScript, Modeling and Simulation, Cmake, Gradle, Groovy, Kotlin, Networking and Sockets (TCP, UDP, HTTP, TLS, Websocket, etc.), Concurrent Programming, Modern C++ Design, Systems Programming, UML/SysML

Experience

Software Systems Engineer *MITRE, 202 Burlington Rd, Bedford MA*   *October 2019 - Current*
Software Systems Engineer for the Emerging Systems Engineering Technologies department at MITRE. The following is the description of the projects and tasks that she completed, most recent to least:

- She worked on a C++ model of a system to be used for testing, mostly working on the routing of data throughout it so it could integrate well with different open protocols and standards.
- She also worked on a set of tools used for identifying important connections in graph models of networks populated from databases.
- Another effort she worked on was integrating a simulation environment with the modeling tool Magic-Draw, this involved a set of static analysis tools that looked at the Abstract Syntax Tree of the simulation's code and populating diagrams and tables within the modeling software.
- She worked on a tool using proxmox the virtualization manager to spin up qemu virtual machines and set up a network based on configuration files supplied. The program would then run MITRE's caldera ("red team" hacker simulator) on the virtualized network and machines.

uml.cafe *Independent,*   *June 2021 - Current*
uml.cafe is the domain name of a live, multi-user, UML diagramming web application made completely by Emory. It is compromised of 4 different code repositories that she worked on in her free time after work. The four parts are: The simple and quick uml-cpp which manages the core of the uml operations on the backend per user. uml-user-service is a websocket server written in Rust used as a layer to handle user level interactions and serves as the website api endpoint. uml-js is the JavaScript library that serves as the api to interact with the backend / endpoint of the server. uml-cafe is the Vue frontend app that makes up the visuals of uml.cafe. Please feel free to play around with it if you have time.

Thermodynamics Research *WPI, 100 Institute rd, Worcester MA*   *June 2018 - June 2019*
While working on the WPI senior year MQP capstone she was able to work in a lab and assisted with some image analysis algorithms written in python that were used and eventually cited in a publication in Nature to validate some non-equilibrium thermodynamics Theory a staff member was working on.

Education

Worcester Polytechnic Institute: Bachelors of Science in Physics with a minor in Computer Science
GPA: 3.75 Graduated May 2019 with High Distinction