Emma Linnéa Hardison
(510) 789-8790, emma.hardison@colorado.edu, Boulder, CO
My github and linkedIn

Education

BS Computer Science, University of Colorado Boulder, **GPA: 4.0/4.0** Graduating May 2023

Technical Skills

Languages: golang, java, python, C++, C, SQL, javascript, HTML, CSS, assembly, scala, yaml

Other skills/Frameworks: Node.js, ejs, Figma, Pandas, Numpy, object oriented programming, UI/UX design, functional programming, PostgreSQL, Kubernetes, Github Actions

Experience

Work:

Software Developer Intern at NetApp: 05/2022-present

- Developed novel features and fixed various bugs for Astra, a cloud service that provides data protection and mobility, using golang and Kubernetes, reducing technical debt and clearing the way for new feature implementations
- Using Kubernetes and golang, I supported scaling efforts to make Astra more reliable during upgrades and outages by implementing auto-scaling of pods
- Worked with Jira, agile and scrum practices, and CICD pipeline used by NetApp to develop, test and release products smoothly.

Courses:

Algorithms, Software Development Methods, Data Science, Artificial Intelligence, Data Structures, Principles of Programming Languages, Computer Systems, Computer Security, Calculus I-III, Discrete Mathematics, Linear Algebra, Logic, Ethics, Database Systems, Object Oriented Analysis and Design, Theory of Computation, Senior Capstone

Projects:

Website for Senior Capstone Project Spring 2023

- Used Angular, Node js, and SQL in order to create a website that Computer Science Seniors can browse, filter, and favorite projects added by that years' sponsors.

Cat Cafe Game: 05/2022

- Worked with a team to develop a game in Java using object oriented design patterns. The player interacts with our GUI to choose a character and make an assortment of coffee drinks for generated customers. Additionally, I helped design and draw the GUI using Aseprite.

Cryptography project: Vigenere Key finder and Length Extension Attack 09/2021

- Python algorithm that takes in an Vigenere-cipher-encrypted english text and returns the unknown key that was used to encrypt it. With this key it can be easily decrypted. This project cultivated my understanding of cryptography and how to prevent similar vulnerabilities in web privacy tactics
- Used Python to perform a length extension attack on a URL that used MD5 to hash its token. This process taught me the importance of using HMAC-SHA256 over hashing, the common mistakes developers make in this area, and why padding schemes are important for cryptographic security

SQL injections, XSS, and CSRF Attack Project 10/2021

- Attacked an approved website with varying levels of protections against these attacks in order to log in without a correct password, steal user information, and log a user into an attacker account without their knowledge using cookies in order to spy on their activity on the site all using python. Executing these attacks taught me common mistakes developers make that make their websites easily broken into by these attacks and how to make a website robust and thoroughly immune to these attacks.

Network Project: Network attacks and Anomaly Detection 11/2021

- Wrote python script that when a specific request to a website that provides keys is made, it sends its own response with a known key before the real request can be sent. This helped me understand basic network protocols and vulnerabilities.
- Python script that detects port scanning by comparing the number of SYN packets and SYN+ACK packets coming out and into source addresses to identify which sources could be attempting a port scan.