Showmik Gupta

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EDUCATION

University of Maryland College Park, MD   December 2020
Bachelor of Science in Computer Science

PROFESSIONAL EXPERIENCE

Tenable Network Security   Columbia, MD
Research Engineer Intern   June 2019 to August 2019
- Developed and maintained plugins written in the NASL programming language for their Nessus service which finds vulnerabilities in certain versions of Oracle
- Performed static code analysis in Python by looking at nodes in the Abstract Syntax Tree generated by the NASL compiler to determine errors in syntax in certain programs
- Drafted a script that collects pertinent data from Tenable's research advisory and stores for other applications to use
- Collaborated with a remote team while working in the Scrum agile process.

PROJECTS

Stocker Bot: Created a Discord bot in Python that uses user commands to display stock charts and pricing information

- Used Discord API to connect to Discord to handle communication from the user's server to the bot

- Gathered an updated list of stock ticker symbols from NASDAQ and used Alpha Vantage API to get recent and historical stock data to chart them using PyPlot

- Stored Discord server-specific data such as server id, server name, and lighting theme on a MongoDB cluster

Clock App: Made a clock app in JavaScript, HTML, CSS to help learn the basics of React

- Used React to create a Clock component that keeps track of a single state, the current date

- Implemented alarm, timer, and stopwatch functionality which can be improved in the future by issuing cookies so components that are currently running persist even after user closes the tab

Racket Compiler: Created a programming language, a subset of Racket, and a compiler for it which outputs x86 Assembly

- Designed a compiler that can compile expressions like conditionals, variables, strings, pointers, and variable arity functions

- Improved the runtime of the original compiler by 20% by using better instruction selection and assembly rewriting, implementing library functions in assembly, and using symbol interning

Web Security: Secured in miniature social media site by taking precautions against the most common attacks

- Protected user passwords by salting and hashing their passwords before attempting to login
- Prevented SQL Injections and Cross-site scripting by performing input validations on login and post attempts

SKILLS

Programming Languages: Java, Python, OCaml, C, Rust, JavaScript, AVR and x86 Assembly, and Ruby, R
Frameworks and Tools: Linux, Git, React, and Node.js

COURSEWORK

Computer Science: Advanced Data Structures, Computer Graphics, Computer and Network Security, Cryptography, Algorithms, Organization of Programming Languages, Development in JavaScript, Design and Implementation of Programming Languages

Math: Number Theory, Advanced Calculus I, Introduction to Mathematical Proof, Differential Equations, Linear Algebra, Applied Probability and Statistics