

Rohit Chouhan

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Education

Stony Brook University

Master of Science in Computer Science (Thesis) **GPA - 3.62/4**

Stony Brook, NY

Aug 2021 - Present

Institute of Engineering and Technology

Bachelor of Engineering in Information Technology **GPA - 8.37/10**

Indore, India

Jul 2016 - Sept 2020

Relevant Coursework

Operating Systems (Prof. Erez Zadok), Fundamentals of Computer Networks, System Security, Analysis of Algorithms, Visualization, and Human Computer Interaction.

Work Experience

Amazon

Software Development Engineer intern

Austin, Texas

May 2022 - Aug 2022

- Designed a full-stack native AWS internal facing information collecting portal.
- Developed the front-end as static React webpage written in Typescript delivered through AWS S3 and Cloudfront CDN.
- Developed the back-end as AWS Lambda functions written in Python triggered by REST API calls made from the front-end.
- Applied microservices architecture to make application scalable.
- Prepared a CI/CD pipeline for the application using Amazon internal CI/CD tools.
- Wrote unit tests for the back-end lambda function using pytest framework.

Accenture

Application Development Associate

Bangalore, India

Feb 2021 - Jul 2021

- Worked in production support team for a ETL (Extract Transform Load) project for a major Australian bank.
- Responsible for keeping track of 500+ data streams and Jobs that transformed the data from upstream.
- Wrote shell scripts to automate daily report generation.
- Used tools like IBM Datastage, Oracle PL/SQL to debug and the ETL job failures.

Skills

Programming Languages - C, C++, Java, Python, Javascript, Typescript, Go

Markup Languages - HTML, CSS, PS, L^AT_EX

Scripting Languages - Bash, Python

Tools and Frameworks - Git, Vim, React, AWS, Flask, D3, Oracle SQL, GDB

Projects

Secure Trash Bin File System: This is a file system developed on top of WrapFS, which is a pass-through file system for Linux. This was developed as a kernel loadable module written in Linux kernel style C, when mounted for a particular directory it enables a trash-bin like functionality. Whenever a file is deleted it would encrypt it and move it to a trash folder. This is achieved by leveraging WrapFS's concept of upper and lower level objects. VFS layer would think that WrapFS is the actual filesystem while the filesystem like Ext4 would think of WrapFS as the VFS layer. This added layer of indirection allows us to add or modify the filesystem objects.

Safex: This was a sandboxing system developed in C. We made use of eBPF to block system calls allowing only some system calls with certain parameters based upon policy. Using LD preload we can do library interception of glibc system calls, to redirect the calls through a delegate process which would check the syscall and its parameters and then would make the actual system call. I worked on programming the delegate process for various system call, refactoring code and testing the system.

Visualization Dashboard: Developed a data visualization dashboard using D3 Javascript library. It was used to analyze various development factors from United Nation datasets. The dashboard made use of bar chart, time series, choropleth, PCP and MDS.

Research Experience and teaching

Secure Systems Lab

Stony Brook University, NY

Adviser - Prof. R. Sekar

Jan 2022 - Present

- Assisting research towards a more robust binary instrumentation technique.
- Worked on modifying the Linux loader to work with instrumented binaries.
- Used tools like SPEC CPU for creating a testing framework to measure performance of the system.

Teaching Assistant

Stony Brook University, NY

Foundations of Computer Science, Fall 22

Aug 2022 - Dec 2022

- Assisted in grading and creation of exams and homeworks for the course.
- Helped students with homeworks during office hours.

Languages

English - TOEFL : 115/120

Hindi - Native Speaker