Shubham Ghosh

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Career Summary:

A computer engineer with 3 years of experience in Web application development as a part of a Scrum development team. Currently working on projects focused on computer architecture and operating systems with a strong base of coursework in the fields.

Technical Skills:

Programming languages: Java, C, Python, Bash, Sequential Query Language, JavaScript
Software: MATLAB, EAGLE, Proteus, GIT, Subversion, Jenkins
Systems: Windows OS, Linux, CentOS

Education:

Virginia Polytechnic Institute and State University, Blacksburg, Virginia. August 2021 - May 2023 (Expected)
Master of Engineering in Computer Engineering

- Current GPA: 3.83
- Courses Taken: Advanced Linux Kernel Programming, Cybersecurity and the IoT, Computer Architecture, Fundamentals of Information Security, Advanced Real-time Systems, Network Arch and Programming.
- Worked as Teaching Assistant for the courses IT Security and Trust I (Fall 2022) and IT Security and Trust II (Spring 2022, Spring 2023).

Savitribai Phule Pune University, Pune, Maharashtra, India June 2014 - June 2018
Bachelor of Engineering in Electronics and Telecommunications

- Awarded for consistently high performance.
- Courses Taken: Data Structures and Algorithms, Object-oriented Programming, Embedded Systems and Real-Time Operating Systems.

Work Experience:

Software Engineering Intern at Berkley Alternative Markets Tech, Manassas, Virginia. May 2022 – August 2022

- Created automated test suites to verify the end-to-end functionality of three applications used within the organization using Katalon Studio.
- Developed SQL queries to automatically feed relevant data to the test cases in the test suites.

Assistant Manager at Vodafone India Services Pvt Ltd, Pune, India July 2018 – July 2021

- Developed web applications used within the organization.
- Daily work included working with Java, Java Server Faces, PrimeFaces, Java Persistence API and Bash Scripting.
- Worked with PL/SQL in an Oracle Database to develop packages and procedures to maintain the database.
- Created a web application for reporting using Oracle Application Express and JavaScript.
- Acquainted with the Agile methodology, GIT, Subversion and Jenkins.
- Was heavily involved in requirement gathering and working with the clients for demonstrations.
- Awarded with the 'Star Award' for my contribution to the project.

Graduate Projects:

Final Year Project titled "Cache side channel attack on Intel SGX programs" *(in progress)*

- Aim is to demonstrate side-channel attacks on enclave programs inside Intel SGX
- Successfully demonstrated private cache-based flush + reload attack and prime + probe attack on regular programs running on an Intel Xeon Gold 6348 CPU with an Ice Lake microarchitecture.
- Implemented a prime + probe attack on the last level cache on the machine with the attacker and victim programs running on different cores which are not siblings of each other.
- Final step is to extend the last level cache attack to an enclave program which is running on Intel SGX.

Undergraduate Projects:

Final Year Project titled "Autonomous Insulin Dispenser"

- Built a device that dispenses the accurate amount of insulin required for a patient suffering from Type-II diabetes.
- Implemented an algorithm on a Raspberry-Pi that was used for calculating the amount of insulin to be dispensed based on the patients' age, weight, and blood sugar level.
- Sent the patient relevant data to a cloud for storage.
- Integrated a peristaltic pump with the project for dispensing the insulin. The project included an LCD screen and 4x4 matrix keypad used for data input and output for the user.

Third Year Mini Project titled "Bluetooth Based Object Finder"

- Created a portable device which can be attached to any important object to track its whereabouts in the range of Bluetooth connection.
- Coded the "ATMega 328P" microcontroller using the Arduino Uno board.
- Designed and constructed a PCB a part of the project.