Mayank Sharma

+91 8112266961 | mayank8019@gmail.com | msharma.in | GitHub | GitLab

EXPERIENCE

GNOME | Google Summer of Code Intern   `Report`
May 2019 − Aug 2019 | Mentor: Ondřej Holý
- Ported libgdata from (*autotools + make*) to (*meson + ninja*) build system, writing build files to compile and link a shared library consisting of 100+ object files, thereby improving build times by ∼40%.
- Developed a new API for libgdata and augmented various operations in GVfs with this API, creating volatile paths to the new entries.
- All the code is Open Source on GNOME's Gitlab and is planned to make way into GNOME's 3.36 stable release.

WALMART LABS | Software Engineering Intern
May 2019 − July 2019 | Bengaluru, India
- Worked on the Service Orchestration Layer for Walmart International, to create a one-stop solution for 162 Microservices.
- Developed "mozart-utils", an npm package published to Walmart's in-grown npm repository providing standardized utility functions to over 8 sub-modules in a mono-repo.
- Collaborated with team to develop 20 endpoints, with all 20 being used in production systems for Walmart Mexico.

EARLYSALARY | Software Developer Intern
May 2018 − July 2018 | Pune, India
- Implemented centralized Authentication and Authorization, using JumpCloud's Directory-as-a-Service (LDAP).
- Developed Algorithms and APIs, to retrieve and automatically assign a new case to a Pickup Agency based upon its priority in a cluster.

KEY PROJECTS

LLC SIDE & COVERT-CHANNEL ATTACKS
IIT Kanpur | Prof. Biswabandan Panda
- Working on mounting a covert channel attack on a victim running on a different core, using the FLUSH + RELOAD attack on L3-cache.
- Developing a side-channel attack on GnuPG, to observe cache accesses to infer the RSA Private Key.

SECURE KEY-VALUE STORE | Systems Security   `Code`
IIT Kanpur | Prof. Pramod Subramanyam
- Designed and implemented a secure key-value store (in Go) with sharing semantics under the assumption that datastore is malicious.

IMPROVING SECURITY OF ZOOBAR SERVER
IIT Kanpur | Prof. Pramod Subramanyam
- Exploited overflow, format string, DoS vulnerabilities and crafted browser based attacks followed by fixing bugs and implementing principle of least privileges by separating various processes.

GEM OS | Operating System   `Code`
IIT Kanpur | Prof. Debadatta Mishra
- Implemented Multi-level paging, signals like SIGINT, SIGSEGV and SIGFPE, exception handlers like page-faults and divide-by-zero and added system calls like expand, shrink, write, sleep, clone, etc.
- Designed a scalable ext-2 like FUSE-based filesystem for GemOS.

EDUCATION

IIT KANPUR
Bachelor of Technology in Computer Science
Expected to Graduate in 2020

CHILDREN SR. SEC SCHOOL
AISSCE Class XII (CBSE): 92.0%

CENTRAL ACADEMY SR. SEC SCHOOL
AISSE Class X (CBSE): 10.0/10.0

ACHIEVEMENTS
- All India Rank 630 JEE Advanced 2016
- All India Rank 2237 JEE Mains 2016
- All India Rank 854 KVPY 2015
- All India Rank 1707 NSTSE 2014

SKILLS

PROGRAMMING
C/C++ • Golang • Typescript • python • bash • x86 Assembly • Glib

WEB
Node.js • MongoDB • Angular 7 • AWS Lambda & EC2

OSES & TOOLS
Linux • Windows • gdb • Valgrind • meson • Git • Vim • MySQL

COURSEWORK
- Secure Memory Systems (i)
- Security of Critical Infra. (i)
- Parallel Computing (i)
- Systems & Cyber Security
- Operating Systems
- Blockchain Technology & Applications
- Intro. to Machine Learning
- Database Systems
- Data Structures & Algorithms
- Discrete Mathematics
- Software Engineering