

## EDUCATION

Year	Degree	Institution	GPA
2016-20	B.Tech, CSE	Indian Institute of Technology, Kanpur	9.2/10.0
2016	XII (CBSE)	Central Academy	94.6%

## WORK EXPERIENCE

## Nutanix

Bengaluru, India

Member of Technical Staff - III

Aug'22 - present

- **IAM as a Service:** Worked on developing a new IAM (Identity and Access Management) solution based on a micro-service architecture. Made multiple improvements to back-end performance and scalability in order to make it capable of handling hundreds of authentication and authorization requests per second.
- **Service Accounts:** Designed and implemented a new type of identity in IAM called service accounts. Added support for API key and certificate-based authentication, and integrated with various workflows across products. Also added attribute-based access control (ABAC).
- **Federated IAM:** Implemented the domain registration workflow in Nutanix Central (NC), using API keys to set up federation between two IAM instances, one in NC and the other on-prem. Also implemented federated login between the two based on OAuth token-exchange.

Member of Technical Staff - II

Aug'20 - Aug'22

- **CAC and SAML IdPs:** Added support for user login via CAC (Common Access Card) or certificates, along with revocation checking using protocols like CRL and OCSP. Also added support for SAML identity providers, with SSO (single sign-on) and SLO (single logout) supported via both POST and Redirect binding.
- **Minor Features and Support:** Worked on several other minor features, and debugged and fixed a lot of bugs/support tickets. Also responsible for on-boarding three product engineers and managing several interns. Led their training and development and later reviewed their code regularly to ensure code quality.
- **Skills and Technologies:** Proficient in Go and Python. Worked on using Envoy proxy, Crunchy Postgres, Redis, Prometheus, and Jaeger (on Kubernetes).

Intern, Member of Technical Staff

May'19 - Jul'19

- **Integration with KMS:** Modified an open-source key management server (external KMS) called PyKMIP and integrated it with the existing distributed secret store on AOS in order to help manage encryption keys.
- **CVE Scanning:** Created a tool to scan code repositories for CVEs (Common Vulnerabilities and Exposures), with added support for decompilation of binary files.

## RELEVANT COURSEWORK

Data Structures & Algorithms	Algorithms - II
Compiler Design	Operating Systems
Database Management Systems	Computer Networks
Algorithmic Game Theory	Linear Programming
Randomized Algorithms	Computer Graphics

## SCHOLASTIC ACHIEVEMENTS

- **Academic Excellence Award**, IIT Kanpur 2016-18
- All India Rank **195**, IIT JEE **Advanced** 2016
- All India Rank **219**, IIT JEE **Mains** 2016
- Awardee, **KVPY** and **NTSE** Scholarships 2012-14

## TECHINICAL SKILLS

- **Programming:** Go, C++, Java, Python, bash, CUDA, PHP
- **Infra:** Kubernetes, Docker
- **Database:** Redis, PostgreSQL, Elastic Search

## PROJECTS

## Compiler for Go

Compiler Design

Prof. Amey Karkare

Jan'19 - Apr'19

- Developed a **Golang to X86** compiler, up to AT&T format assembly, with all basic functionality as well as features like function overloading and auto type-inference.

## Quantum Query Complexity

Quantum Computing

Prof. Rajat Mittal

Jan'20 - June'20

- Applied different techniques to find the gap between a function's degree and its block multi-linear degree.

## Schelling Games

Game Theory

Prof. Sunil Simon

Sep'19 - June'20

- Worked on various game-theoretic models of Schelling segregation. Proved several hardness results and derived algorithms related to equilibrium existence.

## EVeN: Event Venue Notifier

Computing Laboratory

Prof. Nisheeth Srivastava

Aug'18 - Nov'18

- Created a web/mobile application that notifies users of events based on the time and their current location.

## GemOS: x86 Operating System

Operating Systems

Prof. Debadatta Mishra

Aug'18 - Nov'18

- Implemented virtual memory, paging, system calls and page fault/exception handling, signal handling, process management (clone and sleep), scheduling of processes, and a file system for GemOS.

## Code-based Cryptography

Summer Intern, ISI Kolkata

Dr. Anirban Ghatak

May'18 - Jul'18

- Worked on cryptanalysis of the GPT system, a code-based cryptosystem based on rank-metric codes.

## EXTRACURRICULAR

- Stood **1<sup>st</sup>** among over 50 teams in the on-campus **code.fun.do** organized by Microsoft
- Mentored students and conducted institute-level classes as an **Academic Mentor** for mathematics
- Performed as a vocalist for Music Club, IIT Kanpur