

AADITYA M NAIR

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amnair.dev

EDUCATION

IIIT-Hyderabad

2013 – 2020

B.Tech + MS (By Research) in Computer Science

Thesis on **Erasure Coding for Distributed Storage**

Member of *Student Placement Committee*

Dean's Merit List awarded for the year 2016–2017

EXPERIENCE

Tower Research Capital

Jan 2022 - Present

Software Engineer - III (Information Security)

Gurugram, IN

- Performed security reviews for new initiatives like onboarding crypto exchanges.
- Optimising the internal OAuth Platform and Permission Manager: Cypher

Tower Research Capital

Jan 2021 - Dec 2021

Software Engineer - II (Information Security)

Gurugram, IN

- Performed security reviews for new initiatives like onboarding crypto exchanges.
- Onboarded **Hashicorp Vault** as a secrets management platform.
- Setup **AWS Workspaces** as an alternate remote access tool.
- Maintaining Tower's internal **authN/authZ** tool: Cypher

Tower Research Capital

June 2019 - Dec 2020

Software Engineer - I (Information Security)

Gurugram, IN

- Improved visibility into service account usage within the **Linux** infrastructure.
- Built **logstash** based data ingestion pipelines for Tower's in-house SIEM: Cerebro
- Partnered with Enterprise teams to onboard and setup **VMWare Workspace One** MDM tool.

Facebook Inc.

June 2017 – Sept 2017

Production Engineering Intern

London, UK

- Worked on improving hypershell, a push based massively parallel command execution tool.
- Migrated hypershell to a HDFS based storage backend as well as create a common storage API.
- Improved performance of read/aggregate operations by **more than 90%**.

IIIT-Hyderabad

Sept 2016 – May 2019

System Administrator (part-time)

Hyderabad, IN

- Managed multiple services including the **internet proxy**, **LDAP**, **DNS** and **VMs**.
- These products served **~3000 people** at any time.
- Involved in **mentoring the next generation** of student sysadmins.

IIIT-Hyderabad

May 2015 – May 2019

Research Assistant: SPCRC (part-time)

Hyderabad, IN

- Working with Dr. Lalitha Vadlamani on the **Locally Recoverable Erasure Codes**.
- Awarded **Runner-Up Best Paper** for one of the research publications
- Also tasked with managing the the various machines that make our lab's **cluster**.

PROJECTS

Hashicorp Vault

Secrets Management Tool

- Took charge of configuring and deploying Vault within our infrastructure.
- Onboarded **60 % of the engineering teams** to use vault within their workflows/code.
- Migrating Tower's entire **PKI** infrastructure to use Vault.

VMWare Workspace One

MDM Tool for all of employees' laptops

- Led the onboarding, configuration and deployment of macBooks and iPhones within Tower.
- Acted as an SME for all things enterprise Apple within Tower.

Cypher

Internal Authentication and Permissions Management

- Cypher is an internal *OAuth like* tool to manage access into Tower's different services.
- Working on proper OAuth2 compliance and integration with Tower's IAM.

AWS Workspaces

Alternate Remote Access tool for Employees

- Setup the basic infrastructure (like subnets, VPNs, etc) on an entirely new AWS account.
- Used **SaltStack** to instantiate and manage the workspace VM.

Cerebro

Custom SIEM tool

- Maintained the kubernetes based ingestion pipelines as well as the various log parsing code.
- Worked on developing correlation features for the SIEM.
- Introduced a **Redis** cache to speed up log processing.

RESEARCH PUBLICATIONS

Maximally Recoverable Codes with Hierarchical Locality

Aaditya M Nair, V. Lalitha

- Published in NCC 2019. Awarded **Runner-Up Best Paper**

A Field Size Bound and Constructions of Maximally Recoverable Codes with Hierarchical Locality

D. Shivakrishna, Aaditya M. Nair, V. Lalitha

- Extends the above paper and adds some bounds to the construction
- Paper was published in ISIT 2021

Maximally Recoverable Codes with Hierarchical Locality: Constructions and Field-Size Bounds

D. Shivakrishna, Aaditya M. Nair, V. Lalitha

- Expected to be published in IEEE TIT Journal.