

DIVYAANK TIWARI

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EDUCATION

Stony Brook University, Stony Brook, NY, USA

August 2023 - May 2025

Master of Science in Computer Science

GPA - 3.93/4

Courses: *Distributed Systems, Decentralized Data Management, Operating Systems, Analysis of Algorithms*

Volunteering: *Member of Artifact Evaluation Committee for ASPLOS '25 & FAST '25*

Sardar Patel Institute of Technology, Mumbai, MH, India

August 2016 - June 2020

Bachelor of Engineering in Computer Engineering

GPA - 9.22/10

SKILLS

- **Languages:** Scala, Java, Python, C, C++ bash, Golang, SQL, JavaScript, HTML, CSS, Promela
- **Databases:** Oracle, SQL Server, SQLite
- **Frameworks:** Apache Ignite, Caffeine, gRPC, Spring, Prometheus, Grafana, Loki, React, Node.js, Spin
- **Tools:** Git, Docker, Kubernetes, CI/CD, Azure DevOps & App Insights, VisualVM, JFR, Akamai, OpenAPI

PROFESSIONAL EXPERIENCE

Stony Brook University

Stony Brook, NY, USA

Graduate Research Assistant at Prof. Erez Zadok's File systems and Storage Lab

August 2023 - Present

- Investigated a non-deterministic, kernel oops bug in the Journaled File System (JFS) using Metis.
- Submitted 2 patches [1, 2] to the Linux kernel for the aforementioned bug.

MSCI Inc.

Mumbai, MH, India

Associate Quantitative Developer (Backend Engineering, SDE - II)

September 2022 - August 2023

- Improved average response time for Exposure API by a staggering 400% by implementing a gRPC interface.
- Implemented a Recursive Descent Parser to transform gRPC objects to custom domain objects.
- Developed a batch-processing utility that compares two XML files (1-10 GB), and generates comparison reports.
- Designed an Apache Ignite-based cache for the Exposure API that backs the in-memory, Caffeine cache.
- Spearheaded performance engineering efforts to optimize Ignite cache operations and reduce memory-footprints.
- Achieved a 5-fold reduction in API response time for Fixed Income assets and a 60-fold drop for Equity assets.

MSCI Inc.

Mumbai, MH, India

Associate Site Reliability Engineer (SDE - II)

January 2022 - August 2022

Analyst Site Reliability Engineer (SDE - I)

June 2020 - December 2021

- Promoted from an Analyst to an Associate, one year before the traditional duration!
- Entrusted with the stability of Index applications and infrastructure as the Lead SRE for Asia-Pacific shift.
- Engineered an application to aggregate performance metrics from the distributed Index calculation service.
- Constructed a compliance portal for tracking Index Applications and Databases per EU Benchmark Regulations.
- Crafted Splunk dashboards utilizing data from Index calculation service logs to identify database bottlenecks.

Siemens

Pune, MH, India

Data Science Intern

January 2020 - June 2020

- Developed a Time Series model (Mean Absolute Percentage Error: 7.17%) for product sales prediction.
- Assisted in the migration of SCM Team's reporting platform to ThoughtSpot by designing database schemas.
- Modelled Product-delivery data present in SAP HANA as a Knowledge Graph using Amazon Neptune.

PROJECTS

Metis: Model checker for File Systems | C, C++, Promela, Spin, bash, Model Checking, Kernel Debugging

- Compressed Metis' Replayer to a single file, achieving a 60% decrease in code size.
- Implemented Containerized Swarm Verification (Parallel Model Checking) support for Metis using Kubernetes.

Distributed Key-Value Store using PBFT | Java, SQLite, Socket Programming

- Developed a scalable, sharded, Byzantine fault-tolerant key-value store (~6000 LOC) in Java.
- Designed the store's transaction processing engine using 2PC, 2PL and Linear PBFT algorithms.