

# DIVYAANK TIWARI

🏠 Stony Brook, NY 📞 +1 (631) 739-3822 ✉️ dtiwari@cs.stonybrook.edu 🏠 <https://divyaankt.github.io/>  
🌐 <https://github.com/divyaankt> in <https://www.linkedin.com/in/divyaank-tiwari>

## 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*

**Teaching Assistantships:** *CSE 320: Systems Fundamentals II & CSE 306: Operating Systems*

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

**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, Kata Containers, React, Node.js
- **Tools:** Git, Docker, Kubernetes, CI/CD, Azure DevOps & App Insights, VisualVM, JFR, Akamai, OpenAPI
- **Misc:** Microservices, Caching, Data Structures & Algorithms, REST APIs, Agile Methodology

## 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.
- Added Exposure computation support for Contract for Difference and Equity Index Derivatives.

**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

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

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

**Metis: Model checker for File Systems | Kubernetes, Kernel Debugging, C, Spin, bash, Model Checking**

- 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.

**Programming Language Interpreter | Golang**

- Designed an interpreter for a toy programming language, which supports Closures, Macros and REPL.
- Leveraged Pratt Parsing algorithm to implement efficient operator precedence parsing in the interpreter.