

# DIVYAANK TIWARI

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## EDUCATION

**Stony Brook University, Stony Brook, NY, USA**

August 2023 - December 2024

*Master of Science in Computer Science*

*GPA - 4/4*

*Courses: Advanced Project in File systems and Storage Lab, Operating Systems, Decentralized Data Management*

**Sardar Patel Institute of Technology, Mumbai, MH, India**

August 2016 - June 2020

*Bachelor of Engineering in Computer Engineering*

*GPA - 9.22/10*

## TECHNICAL SKILLS

- **Languages:** Scala, Java, Python, C, bash, Golang, SQL, JavaScript, HTML5, CSS3
- **Operating System:** Linux (Oracle Enterprise Linux and Ubuntu)
- **Databases:** Oracle, SQL Server
- **Frameworks:** Apache Ignite, gRPC, Spring, ReactJS
- **Tools:** Git, Docker, Kubernetes, Azure DevOps & App Insights, VisualVM, JFR, Akamai, Splunk, OpenAPI
- **Misc:** Distributed Systems, Backend Engineering, Performance Engineering, Algorithms, RESTful APIs

## PROFESSIONAL EXPERIENCE

**MSCI Inc.**

**Mumbai, MH, India**

*Associate Quantitative Developer (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.
- Implemented an Apache Ignite-based cache for the Exposure API that backs the in-memory, Caffeine cache.
- Performed extensive performance engineering to optimize Ignite cache operations and reduce memory-footprints.
- Responsible for 5-fold and 60-fold decrease in API response time for Fixed Income and Equity Assets respectively.
- 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, an year before the traditional duration!
- Entrusted with the stability of Index applications and infrastructure as the Lead SRE for Asia-Pacific shift.
- Resolved Akamai Content Delivery Network and Web Application Firewall-related issues as the SRE SPOC.
- Responsible for preventing Service Level Agreement breaches in Index calculation and distribution batch jobs.
- Developed an application for aggregation of performance metrics from the distributed Index calculation service.
- Developed an 'EU Benchmark Regulations' compliance portal for tracking all Index Applications and Databases.
- Created Splunk dashboards by using data from Index calculation service logs for detecting 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

**Model Checking Journaled File System (under Prof. Erez Zadok) | C, Model Checking, Kernel Debugging**

- Used Metis, a differential-testing model-checking framework, to identify regressions in the Linux-based Journaled File System (JFS) by leveraging ext4 as the reference file system and conducting efficient state-space exploration.
- Currently investigating kernel hang bugs in JFS using debugging techniques like logging, assertions, profiling.

**Programming Language Interpreter | Golang**

- Designed an interpreter for a toy programming language, which supports Closures, Macros and REPL.
- Implemented the language parser using Pratt Parsing, a modification of Recursive Descent Algorithm.