DIVYAANK TIWARI

(On F1 Visa)

dtiwari@cs.stonybrook.edu divyaankt.github.io [divyaankt](https://github.com/divyaankt) **in** [divyaank-tiwari-24795a130](https://linkedin.com/in/divyaank-tiwari-24795a130)

EDUCATION

Stony Brook University   **Stony Brook, NY, USA**
MS in Computer Science Candidate   *August 2023 -*

Sardar Patel Institute of Technology   **Mumbai, MH, India**
BE in Computer Engineering (CGPA - 9.22/10)   *August 2016 - June 2020*

PROFESSIONAL EXPERIENCE

Associate Quantitative Developer (SDE - II)   **September 2022 - August 2023**
MSCI   *Mumbai, MH, India*

- Developed a Proof-of-Concept, gRPC interface for the Cloud-native, Microservice-based, Exposure API, which improved the average response time by 5-70x across different instruments when compared with the corresponding REST-based requests.
- Implemented a Recursive Descent Parser to transform gRPC objects to custom domain objects.
- Developed a Kubernetes-native utility that can compare arbitrarily large batches of huge (>1 GB) XML files, and generates elaborate comparison and summary statistics reports.
- Implemented a Apache Ignite-based cache for the Exposure API, that backs the Caffeine-based in-memory cache and performed extensive performance engineering and analysis to optimize cache operations and reduce memory-footprints.
- Improved API response time by 5x for non-Equity Instruments and by 60x for Equity-based Instruments.
- Implemented logic for Exposure computation of instruments like Contract for Difference, Equity Futures Option, Equity Index Option and Equity Index Futures Option.

Associate Site Reliability Engineer (SDE - II)   **January 2022 - August 2022**
MSCI   *Mumbai, MH, India*

- Entrusted with the stability of Index applications and infrastructure as the Lead SRE for APAC shift.
- Appointed as the SRE SPOC for resolving Akamai CDN and WAF-related issues.

Analyst Site Reliability Engineer (SDE - I)   **June 2020 - December 2021**
MSCI   *Mumbai, MH, India*

- Monitored Index calculation and distribution batch jobs to prevent SLA breaches caused by infrastructure bottlenecks or application regressions.
- Developed a utility to extract performance metrics from production instances of the SOA-based Index calculation service.
- Created Splunk dashboards by using data from Index calculation service logs for detecting database bottlenecks and long running SQL queries.
- Promoted to an Associate, an year before the traditional duration.

Data Science Intern   **January 2020 - June 2020**
Siemens   *Pune, MH, India*

- Developed a Time Series model (Mean Absolute Percentage Error: 7.17%) for product sales prediction.

- Assisted in the migration of Supply Chain Team's reporting platform from Excel to ThoughtSpot by designing database schemas.
- Modelled Product-delivery data present in SAP HANA as a Knowledge Graph using Amazon Neptune.

PROJECTS

XML Content Validation | *Java, bash, XSLT, colordiff, Docker*   **February 2023 - May 2023**

- Co-developed a Java utility that takes a pair of XML files with similar portfolio data, and produces difference reports.
- Leveraged XSLT to write rules for pre-processing and sorting files, depending on the underlying XML format.
- Improved execution time by eliminating comparisons between similar files by verifying their MD5 hashes.
- Leveraged colordiff and its various command-line flags to generate informative, HTML-based comparison reports.

application-infra-stats | *Python, bash, SQL*   **June 2021 - February 2022**

- Co-developed a Python utility for the routine aggregation and analysis metrics generated by the distributed, SOA-based Index calculation service.
- Implemented server-hopping logic to parse OSWatcher logs for fetching process and server-level statistics like VM usage, CPU usage, memory usage, load-average and logical number of CPUs.
- Developed custom SQL queries to fetch Index-level insights like the number and type of indexes calculated.
- Designed interactive Power BI visualizations to enable greater observability for all stakeholders.

Programming Language Interpreter | *Golang*   **July 2020 - December 2020**

- Worked through, 'Writing an Interpreter in Go' book and designed a programming language interpreter that supports Closures, Macros and REPL.
- Implemented the parser using Pratt Parsing and Recursive Descent Algorithm.

TECHNICAL SKILLS

Languages	Java (3 years), Python (3 years), SQL (3 years), Shell Scripting (bash/ksh) (2 years), JavaScript (2 years), HTML5 (2 years), CSS3 (1 year), Scala (1 year), C (1 year), C# (1 year), Go (6 months)
OS	Linux (Oracle Enterprise Linux and Ubuntu) (5 years)
Databases	Oracle (12c/19c) (1.5 years), SQL Server 2019 (1 year)
Frameworks	Spring Boot (1 year), ASP.NET Framework (1 year), ReactJS (6 months)
Cloud/DevOps	Docker (3 years), Kubernetes (AKS) (1 year), Application Insights (1 year), Azure DevOps (1 year)
Developer Tools	Git (5 years), Splunk (2 years), VisualVM (1 year), JFR (1 year), Akamai (1 year), Oracle Enterprise Manager (1 year)

EXTRA-CURRICULAR ACTIVITIES

- Teaching Assistant for the Semester-I course, 'ES11: Structured Programming Approach' (2019) at Sardar Patel Institute of Technology.
- Conducted 5 workshops titled, 'Python Fundamentals for Data Science' for the Semester-III course, 'MA203: Probability and Statistics' (2022) at Sardar Patel Institute of Technology.