HARDIK RUPAREL

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EDUCATION

University of California, Irvine — Irvine, CA
Master of Computer Science | GPA: 3.967/4.0 — Sep 2021 – Dec 2022

Veermata Jijabai Technological Institute (VJTI) — Mumbai, India
Bachelor of Technology, Information Technology | GPA: 3.67/4.0 — Jul 2015 – May 2019

TECHNICAL SKILLS

- **Programming languages:** Java, C++, Python, SQL, Go
- **Web Technologies:** React, JavaScript, Flask, Handlebars.js, Template7, HTML, CSS, jQuery, Bootstrap
- **Coursework:** Data Structures and Algorithms, Object Oriented Programming, Database Systems, Software Design Patterns
- **Miscellaneous:** RocksDB, Zookeeper, Cassandra, MapReduce, Linux, Microservices, AWS, REST APIs, E2E testing, MongoDB

PROFESSIONAL EXPERIENCE

Nutanix — San Jose, CA
Software Engineer Intern (Object Storage) — Jun 2022 – Sep 2022

- Designed and implemented a new "Baseline Object Replication" feature to let users replicate pre-existing objects to a remote site, providing customers with low latency data accesses and improved disaster recovery measures
- Utilized RocksDB, MapReduce, C++11 and FlatBuffers to first identify pre-existing objects and persist replication requests, and then initialize asynchronous background tasks for replication
- Persisted latest replication information in object metadata to block duplicate object replication requests; capped the increase in object metadata size to 0.0075%
- Reduced turn-around-time (TAT) significantly by eliminating 100% of object lookup operations during the pre-replication phase; improving user experience for 1000+ Nutanix Object Storage customers across globe
- Won Nutanix Intern hackathon (5+ teams) for implementing objects batch operations using Zookeeper, MapReduce, C++

UBS — Mumbai, India
Software Engineer (Credit Risk- Wealth Management) — Jul 2019 – Jul 2021

Team Contributions:

- Owned end-to-end development and testing for decommissioning a legacy data warehouse system using Java and SQL, reducing Credit Risk's annual IT operational cost by 5% (~2.5 million dollars)
- Developed five data loaders, three data processors and nine data exporters using Java and SQL with test coverage > 90% for calculating and exporting ~40 Credit Risk metrics to the downstream systems
- Executed Credit Risk LGD calculations for Basel III regulatory requirements using PySpark, Python and SQL

Other Contributions & Accomplishments:

- Implemented a Question-Answering (QA) system on the Credit Risk regulatory data using BERT and Elasticsearch, resulting in the improvement of the system accuracy by 25%
- Developed two major components using Computer Vision for detecting eye contact and balanced smile with an accuracy of > 97% to help underprivileged students prepare for job interviews
- Led a team of 4 (3 SDE-1, 1 SDE-2) to devise version 2.0 of "Meri Dukaan" that improved the accessibility of the app by 45%
- Awarded with the highest recognition for outstanding performance that is reserved for top 3 performers in the APAC region

UBS — Mumbai, India
Software Engineer Intern (Group Technology) — Jun 2018 – Jul 2018

- Developed a gaming app- "Meri Dukaan" (currently live in India amongst 100,000+ users), using JavaScript, Handlebars.js, HTML and CSS, in collaboration with an NGO- Pratham, to enhance financial literacy among underprivileged youths
- Designed the app using Reusability Design Principle that improved maintainability and expedited app delivery by ~2 months

PROJECTS AND PUBLICATIONS

Hindi to English: Transformer-Based Neural Machine Translation ● Code ● Publication

- Trained the Transformer model for translating texts from Hindi to English using the OpenNMT-tf library
- Augmented model's vocabulary and knowledgebase by back-translating 3M records from WMT14 English News dataset
- Achieved a state-of-the-art BLEU score of 24.53 on the test data of 2400 parallel records

GeoSharding: A Machine Learning-Based Sharding Protocol ● Code ● Publication

- Enhanced the speed and scalability of blockchain systems by geographically sharding miner nodes using the K-means algorithm and electing a leader from each shard using our novel leader election algorithm
- Attained 200x faster shard creation speed as compared to traditional PoW-based sharding algorithm

Secure Voting for Democratic Elections: A Blockchain-Based Approach ● Publication

- Devised a voting system with advanced security measures like multi-signature authentication using blockchain