Rehan Vipin

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Work Experience

Morgan Stanley *Aug 2022 - Present*

Software Engineer 3

- Developed a self-service data transformation tool, enabling users to make data pipelines 20x faster.
- Improved execution speed of data transformations by 10x via detailed performance analysis.
- Lead multiple software upgrades and migrations, on UI and server. Improving freshness by 20%.
- Wrote and maintained 10s of docs used by the dev team for Production Support.
- Saved 100s of hours for developers by building custom tools, and improving DevOps practices.

Tech stack - Angular, Spring Boot, DB2, Python, Docker

Morgan Stanley *Jan - July 2022*

Technology Intern

- Reduced time required to visualize complete data flow between 100 of models, from minutes to seconds.
- Developed UI & designed UX mockups to quickly iterate over multiple solutions with business users.
- Created a generic library to create dependency visualization UIs in less than 5 mins of dev work.

Tech stack - Angular, d3js

Morgan Stanley *May - July 2021*

Technology Intern

- Developed a POC to enable rendering of large-volume datasets (1M+ rows) on a grid in the webpage.
- It improved initial loading time for datasets by 4x, and reduced memory usage for clients from O(n) to O(1).

Tech stack - AG Grid, Spark, Spring

PES Innovation Lab *May - July 2020*

Research Intern

- Developed a framework to create privacy-preserving deep neural networks using Secure multi-party computation.
- Reduced prediction time of neural networks to 25% of time required by the garbled circuits style state-of-the-art design.
- The increase in speed was done using circuit approximations, cryptographic optimizations and automated neural network pruning.

Tech stack - C, Python

Education

PES University, Bengaluru *2018 - 2022*

B.Tech. Computer Science Engineering.

Graduated with 9.11 CGPA, and a specialization in Systems and Core computing.

Technical Skills

Languages: Python, Java, C, C++, TypeScript, CSS, SQL, Shell Script.
Frameworks & Tools: Angular, Spring Boot, D3js, Docker, TM1, CUDA, MongoDB.
Domains: Full Stack Web Dev, Cryptography, Parallel Computing, Performance Analysis, Deep Learning.

Projects

Personal projects and small-team projects.

GPU-optimized cryptographic hashing
Redesigned the fastest crypto hash function, BLAKE3, to run efficiently on CUDA GPUs.
Optimized the parallel algorithms and their execution using CUDA C++ and SIMD.

Parallel and Distributed Heterogeneous Compute Platform
Developed a framework to speed up compute-heavy tasks by writing them with building blocks which are processed in a distributed and parallel fashion.

std::skip_list
Developed a C++ STL compatible implementation of Skip Lists. Additionally, profiled operations on the data structure to visualize performance. Contributed heavily towards the implementation and documentation.

Faster CNNs using FFTs
Developed a Python library, for faster execution of convolutional neural networks, based on the principle of Fast Fourier Transforms.
It was 20% faster than the Tensorflow implementation of CNNs at the time (2020).

Additional Experiences

Research Intern, Machine Learning - Ennoventure *Jan - Feb 2021*

- Researched and trained POC models as part of a shift towards Hidden Markov Models and Kalman filters for better quality predictions.
- Made a simple stock market predictor to show feasibility.

Teaching Assistant, Unix - PES University *Jan - May 2020*

- Incorporated interactive learning activities for the first time in the course.
- Designed the syllabus and assignments, and graded them.

Subject Matter Expert, Blockchain - PESU IO *Sept - Nov 2019*

- Taught Decentralized applications and Blockchain fundamentals in a 6-week peer-to-peer program.
- At the end of the course, students developed custom decentralized apps from scratch.
- Additionally, mentored students with one-on-one talks.

Awards & Recognition

Winner of Gen AI Challenge, Morgan Stanley, 2025
Awarded for the best use of Gen AI in development during a competition in the Division.

Rookie Talent, Morgan Stanley, 2023
Awarded for project contributions amongst the new developers in the Division.

Semi-Finalist, e-Yantra, 2019
Top 100 nationally amongst 7000+ teams. Built a disaster relief supply bot using an embedded-C microcontroller and image recognition.