RUGVED MHATRE

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EDUCATION

New York University, New York 09/2023 – 05/2025

Master of Science in Computer Engineering | ***GPA: 3.8/4.0***

Relevant Coursework – Data Structures and Algorithms, High-Performance Machine Learning, Deep Learning, Advanced Machine Learning, Advanced Computer Vision, Data Science (Stern), Advanced Computer Architecture

University of Mumbai, Mumbai 08/2016 – 10/2020

Bachelor of Engineering in Electronics Engineering | ***GPA 3.6/4.0***

Relevant Coursework – Database Management Systems, Neural Networks, Digital System Design, VLSI Design

EXPERIENCE

NYU Center for K-12 STEM Education, New York | **Adjunct** 06/2024 – 08/2024, 06/2025 – Present

- Instructed and mentored 100+ high school students in a curriculum focused on Machine Learning fundamentals and Deep Learning, with hands-on projects in Scikit-Learn, TensorFlow, and PyTorch
- Designed curriculum and facilitated interactive learning experiences, earning exceptional feedback from students and NYU

New York University, New York | **Graduate Research Assistant** 08/2024 – 05/2025

- Developing functional and timing simulators for pre-silicon validation and performance analysis of the Ring Processing Unit, a vector-architecture processor for Privacy-Preserving Machine Learning
- Collaborating with researchers to optimize Full Homomorphic Encryption Kernels on the B2K Instruction Set Architecture, enhancing processor efficiency; research paper in progress

Oracle Financial Services Software, Mumbai | **DevOps Engineer II** 09/2022 – 06/2023

- Spearheaded root cause analysis initiatives across the CI/CD pipeline, identifying and resolving deployment issues
- Developed a novel customer origination automation, resulting in a 75% speedup - reduction of a 2-hour task to just 0.5 hrs
- Designed a caching process that improved the performance of 100+ scripts, reducing execution time by 15 minutes each
- Refactored Linux-based Bash scripts into OS-independent Python scripts, improving performance and portability of test infrastructure and CI/CD pipelines, reducing deployment issues by 30% and accelerating development time
- Trained five recruits by conducting knowledge-sharing sessions on an overview of the codebase and the proprietary tools and technologies being used in the project
- Consistently acknowledged as a top performer thrice, with recognition from peers and clients for exemplary work

Oracle Financial Services Software, Mumbai | **DevOps Engineer I** 10/2020 – 09/2022

- Designed and integrated a concurrent test execution framework, stress-testing servers with 200+ sessions, and reducing E2E test runtime by 72 hours across 471 test cases
- Streamlined execution workflow, reducing 30% waiting time by improving the queuing logic to handle execution priorities and resource interdependencies
- Designed an efficient algorithm by implementing a concurrency logic to transfer files over the network, thereby improving the speed of database backups by 50%
- Created scripts for database installation, configuration, and cloning, resulting in 80% fewer time delays and reducing the dependency on the database team

SKILLS

Programming Languages: Python, C/C++, Shell Script, Expect Script, Java, SQL, HTML, CSS, JavaScript

Frameworks: Linux, Git, Jenkins, Oracle Database, Oracle Cloud, Selenium, AWS, Docker, PyTorch, CUDA, TensorFlow

PROJECTS

Multimodal Sentiment Analysis using Transformers

- Researched multimodal fusion techniques to amalgamate audio, text, and video data for improved sentiment analysis performance
- Achieved 75% accuracy on CMU-MOSI and CMU-MOSEI datasets using Early Fusion Transformers, Multimodal Transformer models, and experimented with innovative approaches such as Tensor Fusion Model

Continual Learning for Autonomous Vehicles

- Developed Continual Machine Learning models, focused on real-time prediction of steering angles using image data
- Explored strategies such as Elastic Weight Consolidation, Experience Replay, and researched a novel approach – Temporal Consistency Regularization for autonomous vehicle navigation

Efficient Vision Transformers

- Conducted performance analysis of ViTs using PyTorch Profiler to identify bottlenecks and optimize execution
- Utilized Flash Attention to enhance the computational efficiency and reduce memory usage of ViT models by 20%