Mohit Mehta

mm12318@nyu.edu
mehtamohit013
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Education

Sept 2022 - May 2024 **New York University**
Master of Science(MS) in Computer Science, GPA: 3.83/4
Relevant Coursework: Machine Learning, Deep Learning, Big Data, High-Performance Machine Learning

Aug 2018 - May 2022 **Indian Institute of Technology Indore**
Bachelor of Technology in Electrical Engineering, GPA: 8.74/10

Experience

May 2023 - Aug 2023 **Data Science Intern**, *Ploomber (Y Combinator)*
- Added debugging and profiling capabilities such as runtime analysis to Jupyter Notebook executor in Ploomber[GitHub]
- Added support for MSSQL and DuckDB and improved SQL query visualization in Jupyter Notebook in Jupysql[GitHub]
- Reduced Python package development time by 1.6x by optimizing the workflows and CI/CD using GitHub Actions

Mar 2023 - Jun 2023 **Graduate Research Assistant**, *AI4CE Lab, New York University*
- Researched 3D object reconstruction and Neural Radiance Fields(NeRF) focusing on optimizing camera positions.
- Successfully deployed multiple deep learning models to NYU Greene HPC with Slurm, specializing in 3D object processing such as pixel-to-point mapping with PyTorch3D, with experiment tracking done using WandB

May 2021 - Jun 2022 **Research Assistant**, *Indian Institute of Technology, Indore, India*
- Developed a virtual world using Webots(in Python), SUMO, and MATLAB featuring autonomous vehicles(AV) in an urban city, with the primary goal centered around selecting an optimal 5G telecommunication tower for AV
- Developed an ETL Pipeline in Python to collect and process vehicular data and 3D LiDAR scans from the simulation
- Devised a memory-efficient and privacy-focused(using federated learning) deep learning model based on Google Inception with (1/30) parameters as compared to state-of-the-art(SoTA), on 3D Point Cloud Data for selecting the best telecommunication tower in real-time, with the same accuracy of 65% as that of SoTA [Detailed Report]

Projects

April 2023 - May 2023 **Forest Fire Tracker(Distributed Computing)**
- Developed an end-to-end real-time forest fire tracker, with the help of Unity, Kafka, Redis, and Dask.
- Used Kafka to coordinate between multiple services such as Unity simulation, data pre-processing, and fire prediction, with Redis as a caching solution and Dask for implementing the algorithm in a distributed manner.

Aug 2021 - Dec 2021 **ITU AI/ML in 5G Challenge**
- Created an intrinsic curiosity module in PyTorch to incentivize exploration in sparse rewards environments, resulting in a 5% total reward improvement compared to the standard deep reinforcement techniques like Deep Q Networks, and Actor-Critic for beam scheduling and user selection in a simulated 5G mmWave wireless environment
- Ranked 2nd and collaborated with problem settlers to include the solution as part of the research paper [Publication]

Publications

ITU-JFET'22 Simultaneous beam selection and users scheduling evaluation in a virtual world with reinforcement learning

Achievements

Dec 2021 **Led the team to 2nd place finish** in the ITU AI/ML in 5G Challenge 2021

Mar 2020 **Qualified for Semi-Finals as the Team Leader** in the E-Yantra Robotics Competition 2019-2020

Skills

Programming Python, SQL, C++, MATLAB
Big Data Dask, Apache Spark, Hadoop, MongoDB, Kafka, Redis
AI/ML PyTorch, Tensorflow, JAX, HuggingFace, Scikit-Learn, SageMaker
Frameworks AWS, Docker, Git, GitHub, GitHub Actions, Flask, ROS