Takshshila Rawat

(480)-335-1908 | takshilarawat@gmail.com | linkedin.com/in/takshshila/ | github.com/takshshila | Tempe, AZ

EDUCATION

Arizona State University (Tempe, AZ) Aug. 2021 – May 2023
Master of Science in Computer Science CGPA: 4.0/4.0

National Institute of Technology Hamirpur, India Aug. 2012 – May 2016
Bachelor of Technology in Computer Science

SKILLS

Languages: Python, Cuda-Programming, C++, Java, JavaScript (AngularJS, React.js), HTML/CSS, SQL, C/.Net
Tools: Git, Jenkins, MySQL, Docker, Flask, Postman, Neo4j, Elasticsearch, MQTT, Linux, Jupyter Labs
Machine Learning: PyTorch, Scikit-Learn, TensorFlow, Keras, NumPy, Pandas, NLTK, Pycuda, Networkx

EXPERIENCE

WP Carey Tempe, AZ
Research Aide: [Python, Pycuda, Pandas, Numpy, Jupyterlabs, MQTT, Flask] June 2022 – May 2023

- Delivered a robust method alternative to traditional Machine Learning strategies (Decision Tree, Random Forest, etc.) to solve function approximation and classification tasks using self-organizing maps (Kohonen-nets).
- Implemented data pipeline to stream data from IOT device (using MQTT protocol), transformed the data columns w.r.t ranked features, and performed online training by reducing the overhead of saving sensitive data
- Implemented cuda-kernels for feature ranking and model training and reduced execution time by 140%.
- Delivered an explainable AI for real-time object detection in drone images. Trained CNN and ResNet models on XAI dataset.

Reliance Jio Mumbai, India
Senior Software Engineer: [Java, Javascript, Python, AngularJS, Rest APIs, Neo4j, Microservices] April 2019 - Aug. 2021

- Managed User Interface team for 5G Fulfilment Management System that performs Network Provision on Bare metal and the cloud using a set of workflows. The nodes and relationships of the workflow are created through the user interface, stored in neo4j, and executes one by one one-time or scheduled through cron schedulers
- Mentored a team of 8 to develop Machine Learning as a Service consisting of an Anomaly Detection and Forecasting Engine (ARIMA and SHARIMA), which consists of a dedicated dashboard to give user control to select features and algorithms (SVM, KNN, Random Forest, Decision Tree, Gradient Boosting, etc.) and other parameters, provide real-time analysis

Reliance Jio Mumbai, India
Software Engineer: [Java, Javascript, Elasticsearch, AngularJS, Rest APIs, Apache POI, Jline] June 2016 - March 2019

- Developed data monitoring platform, deployed dashboard, and monitored 4G and 5G Indian network usage between 92 million wireless users. Implemented user interface and workflow management microservices
- Developed a microservice, Capacity Manager, that monitors and autoscale resources (CPU, RAM, Docker containers, VNF) in NFV/SDN (Network Function Virtualization and Software-defined network) cloud, supporting real-time autoscaling of computational resources by de-provisioning or provisioning on need thus reducing 45% man-hours
- Designed and developed a centralized and dynamic Command Line Interface for monitoring FCAPS and updating real-time parameters with user/role management and different microservice sessions. Incorporated in 95% of Jio enterprise services.

PROJECTS

Face Recognition on Raspberry Pi using AWS- [PyTorch, Python, AWS, Boto3]

- Developed highly scalable PAAS services that take video frames from Raspberry Pi every 0.5 sec, upload them to s3, trigger lambda function that performs face recognitions, and store results in DynamoDB.
- Trained resnet model using real-time images captured through Raspberry Pi resulted in 98.18% test accuracy

Visualizing Cloud Computing Performance using Behavioral Lines - [D3.js, Cloud]

- Developed a system to visualize to show the behavior of different nodes in a distributed cloud using similarity scores on metrics (CPU, Network, Disk read/write, Memory)
- Collected data from AWS instances and visualized the individual and group trends using interactive stacked area, similarity metric, area selector, popup, and tooltip chart. Dedicated control panel to control parameters and display internal values.

Analysing Artificial Pancreas Medical Control System - [Python, Sklearn, Kmeans, DBSCAN, Machine Learning]

- Analysed Artificial Pancreas medical control system (Medtronic 670G) consisting of continuous glucose monitor (CGM) and Guardian sensor(Insulin). Extracted meal data and non-meal data on the time interval of 2 hours 30 min.
- Calculated features, performed feature analysis, trained for classification, performed clustering and cluster validation

ACCOMPLISHMENTS

- Achieved the highest grade in the Masters's program at ASU, resulting in the prestigious recognition of receiving the **Gold medal**
- Honored with the **Gargi Prize** by the Indian State Government for high academic scores as a female student and inspiring others