Vraj Rana

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PROFESSIONAL EXPERIENCE

Data Analyst - AIDE Lab, Arizona State University   October 2022 - October 2023

- Developed and managed a classroom air quality monitoring network, leveraging data analytics to identify a 30-40% reduction in indoor pollutants through the implementation of portable air filters.
- Streamlined data processing workflow by designing script that utilized REST APIs for efficient data downloading, processing, and storage, achieving a 50% improvement in processing time and enhanced data accuracy.
- Produced comprehensive reports on air exchange rates, incorporating data visualizations to support advanced classroom air quality management, enhancing decision-making processes by 20%.

Software Engineer - Tata Consultancy Services   July 2021 - July 2022

- Applied Agile and Scrum methodologies to develop REST APIs and microservices using Spring Framework for Verizon projects, significantly improving development efficiency and system performance.
- Enhanced system performance by implementing advanced algorithms, data structures, async, and parallel programming, reducing REST API response times by 40%.
- Migrated PL/SQL to Java with JPA and JPQL, enhancing data security and integration with PostgreSQL databases.
- Utilized Jenkins to configure and deploy microservices and REST APIs in testing environments, ensuring seamless integration and efficient testing processes.
- Mentored a team of three in REST API troubleshooting and deployment for efficient project execution.

EDUCATION

Master of Science, Computer Science   May 2024
Arizona State University, Tempe, AZ   3.7 GPA

Bachelor of Engineering, Computer Science   May 2021
The Maharaja Sayajirao University of Baroda, Vadodara, GJ   3.8 GPA

TECHNICAL SKILLS

Programming Languages: Python, Java, C++, JavaScript, SQL, NoSQL
ML Framework: Pytorch, Numpy, Matplotlib, Scikit-Learn, Pandas, Scipy
Technologies: Docker, Kubernetes, AWS, Spring Boot, Node.js, React.js, D3.js, Git, Jenkins, JIRA, PostgreSQL, MongoDB

ACADEMIC PROJECTS

Multimedia Data Analysis and Feature Space Exploration   Fall 2023

- Explored feature extraction, dimensionally reduction, indexing and clustering with caltech101 image dataset to build versatile databases for accurate and effective image\label retrieval and visualization.
- Implemented customizable image identification programs using various machine learning algorithms.
- Programmed SVM and Probabilistic based relevance feedback system for precise results.

Elastic Fusion Cloud   Spring 2023

- Deployed a cost-efficient, auto-scaling web app utilizing AWS EC2, SQS, S3, and CloudWatch based on demand.
- Enhanced deployment by integrating AWS Lambda, SQS for queuing, and DynamoDB for data storage, to develop a smart classroom assistant powered by facial recognition technology.
- Migrated app to hybrid cloud, optimizing costs and improving cloud skills with AWS and OpenStack.

Data Fusion and Classification for Glycemic Analysis   Spring 2023

- Synced Insulin and CGM datasets and extracted insights and distinctive features.
- Trained supervised machine learning models to classify data using meal and non-meal features.
- Analyzed meal data using clustering techniques and assessed accuracy with SSE, entropy, and purity metrics.

EmoViz: Emotion Visualization from Tweets   Fall 2022

- Developed an immersive emotion inference solution for tweets using deep neural networks and natural language processing to predict human emotions.
- Enhanced user engagement through dynamic stream graphs and bubble-packing graphs using D3.js for effective emotion visualization.

HONORS & ACTIVITIES

- Jehn, M, ..., Rana, V et al. Effectiveness of Do-In-Yourself Portable Air Cleaners in Reducing Exposure to Respiratory Aerosols in US Classrooms under review with Science & Education Journal.