

Vraj Rana

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EXPERIENCE

AI Integration Specialist, Thunderbird School of Global Management *February 2024 - Present*

- Developed Animated Conversational AI, enabling seamless interaction with users through AI-generated characters.
- Generated virtual reality space with animated characters and facilitated interactive engagement.
- Facilitated technology information sessions for students, outlining available resources and practical usage.

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

- Developed a classroom air quality monitoring network, streamlining data collection, and reducing time by 50%.
- Conducted statistical analysis and programmed data visualization on pre- and post-intervention air quality data of HEPA filter, resulting in a 30-40% decrease in air pollutants.
- Published author of the paper "Effectiveness of Do-It-Yourself Portable Air Cleaners in Reducing Exposure to Respiratory Aerosols in US Classrooms", currently under review with the Science & Education Journal.

Software Engineer, Tata Consultancy Services *July 2021 - July 2022*

- Developed REST APIs and microservices and upgraded legacy code, resulting in better performance and data security.
- Enhanced system performance by implementing advanced algorithms, data structures, asynchronous and parallel programming, and batch processing, reducing REST API response times by 40%.
- Utilized Jenkins and GitLab to configure and deploy microservices, and JIRA and Confluence for documentation.

PROJECTS

Multimedia Data Analysis and Feature Space Exploration *Fall 2023*

- Explored feature extraction, dimensionality 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.

SKILLS

Python, Java, JavaScript, SQL, NoSQL, Spring Framework, Node.js, React, Docker, Kubernetes, AWS, Jenkins, PyTorch, NumPy, Matplotlib, Scikit-Learn, Pandas, SciPy, D3.js, Junit, Mockito, Git, Jira

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*