

UMANG SHAH

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EDUCATION

MS Computer Science, University of Massachusetts - Boston - GPA 4.0/4.0 Expected 2024
Relevant Coursework: Analysis of Algorithms, Neural Networks, Computer Vision.

MSc in Artificial Intelligence & Machine Learning, Gujarat University - GPA - 4.0/4.0 2018 - 2020
Relevant Coursework: Machine Learning, Deep Learning, Advanced Python.

Bachelor of Computer Application, Ahmedabad University - GPA - 3.97/4.0 2015 - 2018
Relevant Coursework: Data Structures and Algorithms, OOP, Advanced Database Management System.

SKILLS

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|-------------------|--------------------|------------------|-------------------|
| • Python, Java | • MySQL, MongoDB | • Django, Flask | • Pandas, NumPy |
| • Computer Vision | • Machine Learning | • Keras, PyTorch | • OpenCV, SKLearn |

EXPERIENCE

Research Assistant May 2023 - Present
Visual Attention Laboratory, UMass Boston *Boston, MA*

- Engineered a high-precision CNN model using Keras to significantly enhance facial recognition accuracy, leveraging the Biwi Head Pose Dataset to predict face pose confidence. Augmented the dataset to increase diversity of the dataset. Decreased False positives and increased overall recognition accuracy from 96% to 99%.
- Streamlined inference efficiency and deployment readiness by converting the Keras model into an ONNX format, ensuring accelerated predictions and seamless integration into diverse systems.

Software Engineer Intern May 2023 - July 2023
Atsign Inc. *Remote*

- Conceptualized and developed a Python SDK called at_python for building applications using the atProtocol.
- Ensured software integrity through the creation of comprehensive test cases.
- Utilized GitHub Actions to validate the SDK's compatibility across various Python versions.
- Crafted illustrative examples and documentation to facilitate user-friendly adoption of the SDK.

Associate Software Engineer Jan 2020 - July 2022
GlobalVox Ventures Pvt. Ltd. *Ahmedabad, India*

- Explored and implemented various Deep Learning and Machine Learning techniques for Facial Recognition.
- Architected a robust backend API system using Flask, orchestrated database schema design with MongoDB, and implemented rapid facial identification for over 100k faces within 2 seconds.
- Successfully developed a system using FER+ dataset for recognizing emotions, categorizing Angry, Sad, Happy, Disgust, Fear, and Surprise expressions with an accuracy of 73%.
- Designed an Indian Numberplate Detection system utilizing YOLO, achieving plate with 98% accuracy and detection within 1 second by leveraging street-acquired data.
- Played a key role in the entopedia.in project by developing APIs using Django Rest Framework, supporting a user base of over 10,000 individuals within Reckitt. Streamlined authentication with OKTA Single Sign-On, and incorporated PayPal & Stripe payment gateways, enhancing user experience by eliminating manual bank transfers.

PROJECTS

Person Re-identification. Re-identifying a person in an environment with multiple cameras using person detection, feature extraction and classification. For person detection, the FRCNN object detection network was used. The ResNet50 network was employed for feature extraction, and classification was based on calculating the Euclidean distance between extracted and stored features.

Finding Initial Centroids for K-Means Clustering. Research work under prof. Trushali Jambudi to identify initial centroids and speed up the convergence of K-Means algorithm.

Note Management System. A Java based application tool like Google Keep which uses MySQL database to store and retrieve notes, reminders, doodles and images. Users can set reminders which will be emailed on the specified date and time. Users can also share notes with other users and can make changes to shared notes.