Vanshika Sharma

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Education

Stony Brook University, State University of New York **Aug 2021- Jan 2023 Exp.**
Masters in Computer Science, Courses: AI, Data Science, Virtual Reality, Computer Vision

Birla Institute of Technology and Science Pilani **Aug 2015-Jun 2019**
Bachelor's in Engineering, Computer Science

Technical Skills

Programming: Python, PyTorch, TensorFlow, Keras, Tesseract, C, C++, GPU/CUDA programming, HTML
Technologies: AWS, Git, LiDAR sensors, Depth Cameras, Raspberry pi, ROS, SQL
Packages: Pandas, Scikit-Learn, OpenCV, Matplotlib, NumPy, ROS Packages, FastAPI

Work Experience

Freelancer, Start-Up Specialist **Jan 2021- Aug 2021**
Self-Employed *New Delhi, India*

- Engineered a supervised learning model in PyTorch that enables AI driven lung disease detection in x-ray images
- Finetuned a ResNet28 model using PyTorch to classify images of various skin diseases with 98 percent precision
- Automated car detail capturing using TensorFlow which stores number plate, car model and colour from an image
- Performed OCR and Entity Extraction using Tesseract and TensorFlow on Doc Images to store details in database
- Created a centralized e-commerce ticket API in Zendesk to get data from multiple ticket APIs on other platforms
- Developed a Few-Shot Learning Model to classify 5000 jewellery designs, reducing manual effort by over 2 hours
- Designed a VGG-16 Siamese Neural Network using TensorFlow for feature extraction with 96 percent precision

Deep Learning Research Engineer **Jun 2020-Jan 2020**
TMotions Global Ltd., Full-Time *Chandigarh, India*

- Created a custom Visual Search Engine for a Luxury Goods e-commerce website using deep learning in Keras
- Contributed to creating a 3D virtual tour application for a real-estate property in London using Unity

Computer Vision/Robotics Engineer **Oct 2019-Jun 2020**
Aspagteq Technology Pvt. Ltd., Full-Time *Noida, India*

- Created a ROS package of a Speech to Text Chatbot implemented using Recurrent Neural Nets in TF and Keras
- Contributed to building a customized Autonomous Navigation ROS Package for a Mobile Robot using SLAM
- Implemented a custom object detector using YOLO V4 for a serving robot to detect restaurants items in a scene

Robotics/Computer Vision Research Intern **Jan 2019- Jul 2019**
Integrated Swarm Planning and Intelligent Robotic Engineering Lab, Full-Time *BITS Pilani, Pilani Campus*

- Performed Feature Extraction and Object Segmentation in real-time on 2D LiDAR sensor data using ROS, Python
- Developed an unsupervised learning model using RANSAC and KMeans clustering for the 2D object segmentation

Research Projects

Quantifying Dance Movements to Understand Emotion | *Tensorflow/Pose Estimator* **Jan 2022 - Present**

- Developing an algorithm to capture dance movements with cameras and sensors to detect emotions behind a dance
- A hybrid deep learning model of CNNs and LSTMs will be implemented and finetuned after data preparation

Enhancement of Mars Rover Curiosity Images using SRGAN | *OpenCV/Tensorflow* **Dec 2021 - Present**

- Research paper implementation of SR-GANs on real images captured by Mars Rover Curiosity using Keras and TF
- Data was collected and cleaned from the official NASA Open Data Portal
- Implemented a discriminator-generator model to create High Resolution images from Low-Resolution images

Exercise Form Evaluator | *OpenCV/Pose Estimator* **Aug 2021 - Dec 2021**

- Designed and executed an algorithm to evaluate movements and form of a physical exercise performed in real-time
- Built the pose estimation model using MediaPipe Human Pose Estimator Library and OpenCV in Python