Levin Dabhi

Ahmedabad, India

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EDUCATION

Nirma University **Ahmedabad, Gujarat**
B.Tech in Computer Engineering *Expexted May 2021*

- Related Course works: Linear Algebra, Statistics and Probability, Calculus, Objected oriented programming, Data Structure, Algorithm, Operating System, Intro to DBMS, Computer Networks, Machine Learning, Deep Learning, Internet of Things, Financial Management

BAPS Gurukul, Gondal **Gondal, Gujarat, India**
Grad. High School GSEB 93%, 99.14 percentile *May 2017*

WORK EXPERIENCE

Data Science Intern at Indian Naval Ship (INS) Valsura *June 2020 - July 2020*

- Worked on Exploratory data analysis of Ship engine data set and developing a predictive maintenance system for fault classification in that engine.
- Worked on various imputers, and dimensionality reduction techniques like finding different types of Correlations, and Principal Component Analysis. Used various Kernel Density plots for fault classification.

Product Development Intern at Infivolve, Inc. *Sept 2019 - May 2020*

- Worked on developing a virtual coach for Basketball and Lawn Tennis sports.
- Developed algorithm that tracks player and ball from the video in real-time using deep learning techniques. Reduced the inference time of the tracking algorithm by a factor of 2.4
- For Basketball sport, Worked on the analysis of various parameters like speed and angle of a ball from videos. For Lawn Tennis, Worked on analysis and plotting of various parameters like bounce point, hit point, and speed of the player. Developed court mapping technique that maps players and ball in 2D for both sports.

Research Assistance at Nirma University *May 2019 - July 2019*

- This research project was funded by the Board of Research and Nuclear Sciences (BRNS)-Department of Atomic Energy.
- Worked on optimal trajectory finding of robotic hand by solving inverse kinematics to reach a particular point which is damaged in Tokamak using Deep Reinforcement Learning. Developed a model that predicts the trajectory of the robotic hand in simulation. The simulator was developed in the blender tool as per requirement.
- Implemented policy gradient algorithms like Proximal Policy Optimization(PPO) and Deep Deterministic Policy Gradient(DDPG) with a deep neural network as a function approximator.

ACADEMIC PROJECTS

Image based virtual tryon for clothes *June 2020 - Ongoing*

- Keywords: Virtual Tryon, Convolution Neural Network, Thin Plate Spline(TPS), Encoder-Decoder, UNet, PyTorch
- Given an image of a person and an image of cloth to Tryon, the model generated an image of a person wearing Tryon cloth. Both characteristics of a person and Tryon cloth are preserved in the generated image. Made a web-based portal to inference custom input using a google cloud platform.

Video to video translation *Jan 2020 - May 2020*

- Keywords: Image animation, Style transfer, Conditional GANs, Few shot learning, PyTorch, OpenCV
- The content part of the input video has persevered in the generated video while the style part of the generated video is inferred from input images.
- Developed using conditional GANs and few shot techniques of Meta-Learning. In the generator of GAN, AdIN(Adaptive Instance Normalization) is used to infer style and Projection Discriminator is used as Discriminator to preserve content. Few shot learning is used in encoding style of input image. Framework can be used in areas like image animation, Realistic talking head models.

Team Arrow, SAE Nirma Collegiate Club *Sept 2018 – July 2019*

- Keywords: Object Detection, YOLO, Object Classification, OCR, Image Processing, OpenCV, TensorFlow
- Developed detection, classification, and localization algorithms for alpha-numeric objects captured through a camera in UAV. Used Tiny Fast Yolo(tf-yolo) for detection, OCR for alphanumeric classification and KNN for object's color predection.
- Team took part in AUVSI-SUAS competition 2019 held at Maryland, USA. Ranked 35th among 75 universities from all around the world

Development of Game Bot through Deep Reinforcement Learning *Jan 2019 - March 2019*

- Keywords: Game Bot, Reinforcement Learning, Q Learning, Convolution Neural Network, Keras
- Made Atari 2600 game bot using Deep Q Learning with CNN as function approximation. The bot takes a screen image from the environment and predicts the best action which can be taken at that instance. Used OpenAI Gym for simulation.

SKILLS

- Proficient in : Python, Python libraries like numpy, sklearn, OpenCV, pillow, matplotlip, Deep Learning framework PyTorch
- Experience in C, C++,Java, DL framework tensorflow and keras, NLTK, HTML, CSS, Web framework Flask, SQL, Google Cloud Platform, AWS for Deep Learning

HONORS AND AWARDS

- First price at SAC ISRO's Idea Presentation on National technology day, 2019
  Presented idea on usage of AI in space missions.
- First runners-up in ML-Run at National Level techfest, NuTech-2019, Nirma University.

Workshops

- Machine Learning Summer School by IEEE at DAIICT, Gandhinagar. June 2018
- Android app development workshop by Google at TechFest IIT-Bombay Dec 2018