Rushirajsinh Raghuvirsinh Parmar

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My LinkedIn Profile
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Career Objective

To develop a research career and excel in an intersection of Image Processing & Machine Learning; Data Science & NLP via challenging milieus and ultimately gift something beautiful to the world.

Education

Bachelor of Technology – Computer Engineering — **Exp.** Graduation, May 2021
Devang Patel Institute of Advanced Technology and Engineering — **Current SGPA:** 8.15 / 10
Charotar University of Science and Technology,
Anand, Gujarat

10+2 — Graduated, May 2017
Utopia High School — SSC: 88% (May 2015)
GSEB Board — HSC: 86% (May 2017)
Ahmedabad, Gujarat

Skills

- Python, Java, C, C++
- Machine learning,
- Deep Learning, frameworks: PyTorch, Tensorflow, MXnet, FastAI, Keras
- Computer Vision
- Natural Language Processing
- GCP, Amazon AWS Services
- Satellite Image Processing
- MATLAB
- Data Analysis

Work Experience

Research and Development Intern — *Nov,2019 – Feb 2020*

Centre of Excellence, Artificial Intelligence- MCTE, Indian Army

Research intern under Lt. Col Anant Bhatt. Worked on Developing APISE software (AI Powered Intelligent Surveillance Engine). This system combines the working of Object Detection and Facial Recognition methods. Worked on Enhancing Facial Recognition software for long distance and using Image Super Resolution Concepts. Custom Object Detection and Object Tracking to detect and track Terrorists, ANEs, Civilian , Arms and A vehicles. Alarm trigger system for suspect spotting

Machine Learning Research Intern — *May – Jun 2019*

Title: Realtime Person identification using Soft-Biometric Attributes

Bhaskaracharya Institute for Space Applications and Geo-Informatics (BISAG), Gandhinagar, Gujarat

The aim was to develop a system to identify a person-of-interest based on specific set of soft biometric attributes from a surveillance video. The tasks assigned included; creation of private dataset at BISAG premises, foreground-background estimation with deep learning and computer vision techniques, gait analysis, feature extraction, dimensionality reduction and training a machine learning model. The research was carried out in two phases; in first phase analyse and device algorithm for person identification on CASIA Gait Dataset. Later, test on a private gait dataset to ensure the results from first phase are consistent and accurate.
(In the process of writing a research paper in renowned journal to publish the findings)

Trainings

- STTP on Machine Learning & Deep Learning for Data Science and Analytics using NVIDIA Graphics card & GPU Cloud - organized by CHARUSAT, Sept 2018
- Machine Learning, Deep Learning Specialization - Coursera (Andrew Ng)
- Introduction to Machine Learning using Python - organized by DAIICT IEEE Student branch in association with IEEE, May 2018

Projects

• **A composite DNN solution to predict and generate potential COVID-19 antidotes** (Project under guidance of Govt of India in association with NVIDIA, C-DAC and National Supercomputing Mission (NSM) *Mar 2020 - Ongoing* VIEW DETAILS	We have designed a novel composite Deep Learning solution consisting of a Predictive Network architecture and an inter-leaved GAN architecture to **Predict & Generate** potential antidotes This model learns from all the compounds(~72 M) by combining various datasets to predict or generate new potential drugs (Detailed report in the link)	*Deep Learning, Graph Neural Networks, Generative Adversarial Networks, Molecular Docking Tools Predictive Edge Memory Neural Network, PyTorch MXnet, Statistical Analysis*
• **Multi-Label Satellite Image Classification, Image Super Resolution** *Feb 2020 – April 2020* VIEW DETAILS	Using Deep Learning Techniques to perform tasks related to Image Super Resolution, Change Detection and Multi-Label Image Classification on Multispectral Satellite Images	*Python, PyTorch, Machine Learning, Deep Learning, Image Processing, SNAP*
• **Person Identification & Gender Classification using GAIT Energy Image (Further ongoing Research Project)** *Mar 2018 – Feb 2020* VIEW DETAILS	Detection of human gender and identity from complex background, illumination and subject variation by machine for adaptive information service. Worked on SOTON, CASIA dataset, further created a private datasetFor validation, accuracy rate – 99.8%	*Deep Learning, Computer Vision, Pattern Recognition, Machine Learning*
• **Singapore Space Challenge 2019-20** *Aug 2019 – Dec 2019*	To design a satellite concept of not more than 5 satellites(servicer)that can be used to de-orbit space debris	*System Tools Kit (STK) Software*
• **Taxonomy Classification** *Apr 2019 – Jul 2019* VIEW DETAILS	The aim of the project is to predict the tags (a.k.a. keywords, topics, summaries) of a question, given only the question text and its title. The dataset consists of 6M+ of 'Title', 'Body' and 'Tags' of the questions posted on StackOverflow. From disparate stack exchange sites, containing a mix of both technical and non-technical questions. Using Binary Relevance Method with One vs Rest Classifier to achieve more than 94 % accuracy	*NLP, Tableau, Pandas, Scikit-learn, Matplotlib, DCNN*
• **Detection of Army vehicles and Ships from Synthetic Aperture Radar (SAR) Images** *Jul 2019 – Oct 2019*	The purpose of this project was to track and locate the Navy ships and detect any unknown trespassed boats using high resolution SAR images. Developed a highly accurate Deep Learning custom object detection and tracking model.	*Pytorch, OpenCV, TensorFlow, Python, Jupyter Notebook, Scikit-Learn, Matplotlib*
• **Train a Quadcopter to Take-Off, Fly, Hover and Land using Reinforcement Learning** *Sept 2018 – Dec 2018* VIEW DETAILS	Train an agent using Deep Deterministic Policy Gradients (DDPG) to take-off, fly, hover and land	*Deep learning, Reinforcement Learning, Python*

Achievements

- State Rank: 2nd, Thomson Reuters, HackArena - AI Hackathon (Won a cash prize of Rs. 30,000)
- TCS HumAIn competition National Finalist (Nationals TOP 10)
- 2nd Rank in IEEE " Ingenious Machine Learning Hackathon 2019", Inter-college competition at School of Engineering and Applied Science, Ahmedabad University, March 2019
- 2nd Rank in IEEE Machine Learning Hackathon, DAIICT, June 2018
- Core committee member for "Machine Learning Research community" at my university.
- Core Committee member, Program Committee - IEEE Student Branch
- Campus Ambassador for Hacker Earth - 2019-20