ROHITH GANDHI GANESAN

https://grohith327.github.io/ | www.linkedin.com/in/grohith327 | github.com/grohith327
(+1) 917 244 1477 | grohith327@gmail.com | rgg296@nyu.edu

EDUCATION

New York University - Tandon School of Engineering *December 2020 (expected)*
Master of Science in Informatics, *GPA: 3.7/4*
Coursework: Data Science, Big Data, Machine Learning, Natural Language Understanding, Deep Reinforcement Learning

PSG College of Technology *May 2018*
Bachelor of Engineering in Computer Science, *GPA: 7.3/10*
Coursework: Advanced Data Structures, Design & Analysis of Algorithms, Distributed Systems, Object Oriented Programming

TECHNICAL SKILLS

Programming Languages	C, C++, Python, Java, JavaScript, SQL, HTML, CSS
Frameworks & Tools	Pytorch, Tensorflow, Caffe, CUDA, OpenCV, Spark, Git, Docker
Softwares, Cloud Platforms & OS	ArcGIS, QGis, R, GCP, Linux

EXPERIENCE

New York University - RiskEcon and ARPL lab, *Graduate Research Assistant* Feb. 2020 - present

- Developed a 2D & 3D simulation for testing path planning & task assignment algorithms for autonomous drone swarms.
- Improved mapping coverage time with transformers and Graph Neural Nets as policy networks trained with Reinforcement Learning algorithms such as REINFORCE and A3C.
- Utilized different mapping, localization & motion planning algorithms to avoid obstacles in a multi-agent setting of drones.
- Improved object detection models for drone swarms by sharing sparsely encoded multi-view information
- Improved the spectral & spatial resolution of satellite images by utilizing GANs

Indian Institute of Technology, Madras, *Project Associate* Aug. 2018 - May 2019

- Developed a Deep Learning pipeline to convert Indian Sign Language videos to words
- Created a dataset of size 55GB consisting of high resolution Indian Sign Language Videos with 264 classes
- Built a pipeline based on DL methods that uses pose estimation, video feature extractor and sequence models to classify signs
- Achieved state-of-the-art results on the American Sign Language (ASLLVD) dataset proved the generalization of our architecture
- Performed post-training Quantization and Pruning to reduce the memory footprint of the model

CFILT Lab - Indian Institute of Technology, Bombay, *Research Intern* Dec. 2017 - July 2018

- Developed an interactive OCR framework for Sanskrit, Hindi & Gujarati Languages
- Built a cross-platform GUI desktop application in *C++* language using *Qt Creator* that converts Sanskrit documents into editable format & used language models (LSTMs) & n-gram based edit distance methods to reduce OCR conversion errors

PUBLICATION

- INCLUDE: A Large Scale Dataset for Indian Sign Language Recognition. *ACM Multimedia (MM'20).*
- Task Assignment and Path Planning for Drone Swarms Using Reinforcement Learning

PROJECTS

Center for Urban Science and Progress, New York University April. 2020
Adversarial Training to improve Robustness of BERT *https://github.com/grohith327/TextFooler*

- Created adversarial examples for the sentiment classification task by perturbing the input words based on attention.
- Improved the adversarial accuracy of BERT model from 13% to 66% on IMDB dataset by performing MLM pre-training.

Center for Urban Science and Progress, New York University Oct. 2019
Automatic Speech Recognition *https://bit.ly/2QjbQqO*

- Built an automatic speech recognition model that could automate certain tasks on a laptop such as taking picture, changing volume etc. Created a dataset to build a model that could learn from my voice.
- Denoised the audio and applied the short-time fourier transform (STFT) on the signal and converted it to mel-scale which is used as input by a CNN implemented in Tensorflow to classify audio commands real-time and perform actions

Center for Urban Science and Progress, New York University Feb. 2020
SimpleGAN: A python library to ease training of generative models *https://github.com/grohith327/simplegan*

- Built SimpleGAN, a python framework built on top of TensorFlow that aims to facilitate the training of AutoEncoders and GANs by provding *high-level APIs*. Built the library from scratch using few dependencies as possible & has over 5000 downloads.