Aarya Patel

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EDUCATION

Jaypee Institute of Information Technology, Noida — *B.Tech in Computer Science*

August 2016 - July 2020

CGPA: 8.2 / 10

WORK EXPERIENCE

Vitrana, Noida — *Associate Data Scientist*

Aug 2020 - Present

- Leveraged an end-to-end dynamic span graph model for entity recognition, relation extraction, and coreference -resolution from bio-medical literature articles.
- Currently implementing a hierarchical model for Data-to-Text generation.

Aiota Labs, Noida — *Robotics Intern*

May 2019 - July 2019

- Simulated a Parrot AR.Drone in the Gazebo environment. Implemented code using PyQT to control the drone using keyboard controls in the virtual environment.
- Wrote python scripts to use sensory data of IMU and front-camera to predict steering angle and collision probability via an efficient and versatile pre-trained Deep Convolutional Neural Network (DCNN).
- Developed policies for autonomous UAVs using Reinforcement Learning techniques such as Q-Learning to train UAVs for navigation tasks in a simulated setting.

IIIT, Delhi— *Research Intern*

May 2018 - Aug 2018

- Developed a novel multi-modal and real-time technique to predict the popularity of social media posts and their headline under the ACM MultiMedia 2018 grand challenge.
- Extracted multi-modal features from images and metadata using CNN and machine learning techniques to output the popularity of social media posts.
- Achieved **MAE of 1.063, MSE of 2.1767, and Spearman-rho of 0.747.**

PUBLICATIONS

Vidyarthi, A., Patel, A. Deep assisted dense model based classification of invasive ductal breast histology images. *Neural Comput & Applic* (2021). https://doi.org/10.1007/s00521-021-05947-2

Hassija V., Patel A., Chamola V. Police FIR Registration and Tracking Using Consortium Blockchain. *MoSICom, Dubai,* 2020. https://doi.org/10.1007/978-981-15-5243-4_75

SELECTED PROJECTS

Home-Service Bot: Created a differential-drive robot capable of automatically mapping the environment using a wall follower algorithm, executing SLAM, navigating using a DWA path-planning algorithm to pickup and then deliver objects using ROS in the Gazebo

AREA OF INTEREST

Machine Learning

Deep Learning

Computer Vision

Robotics

Statistics & Probability

SKILLS

Python | C++ | C | MySQL |

JS | Redis | PostgreSQL | MongoDB | PHP | Django

Keras | Tensorflow | PyTorch | SKlearn | OpenCV | Numpy

ROS(Robot Operating System) | Gazebo | RViz

Android | Linux | GCP | Bash

ELECTIVES

Artificial Intelligence

Large Scale Database Systems

Introduction to DevOps

Blockchain Technologies

CERTIFICATES AND SCHOLARSHIPS

Udacity:

AI for Healthcare Nanodegree

Robotics Software Engineer Nanodegree

Computer Vision Nanodegree

Awarded with Udacity-Pytorch Scholarship from Facebook

Coursera:

Deep Learning Specialization by Andrew Ng

Machine Learning with TensorFlow on GCP

Image understanding with Tensorflow on GCP

Sequence Models for Time Series and Natural Language Processing on GCP

3D environment.

Pneumothorax Classification and Segmentation: Proposed a new segmentation architecture named PTXUnet to detect, diagnose, and segment Pneumothorax from given chest X-rays. Achieved a **classification accuracy of 92.27% and a mean dice coefficient of 84.45%.** (Journal paper under review at *Expert Systems, Wiley*)

Hippocampal Volume Quantification in Alzheimer's Progression: Build an end-to-end AI system that features a UNet++ segmentation model which integrates into a clinical-grade viewer and automatically measures hippocampal volumes of new patients, as their studies are committed to the clinical imaging archive. Achieved a **mean dice coefficient of 0.91, sensitivity of 0.92, and specificity of 0.99.**

Intracranial Hemorrhage Detection: Proposed a novel CAD system to classify and if present, localize ICH and its five subtypes from a set of CT scans using deep learning. Visualized region localizing the hemorrhage using gradient attention maps. Achieved the best **weighted mean log loss of 0.04967, and the best AUC-ROC 0.9832.**