Vishal Dhull

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Education

University Institute of Engineering and Technology, *Panjab University* — Chandigarh, India
B.E - Computer Science and Engineering; CGPA: 9.4 — *July 2018 - Present*

Experience

1) Software Engineer Intern- Scaler by InterviewBit — **Jan 2022 - Present**
2) Software Engineer Intern- 100ms (BrytecamTechnologies) — **May 2021 - Dec 2021**

Worked directly with co-founders of the startup to develop new features in WebRTC Video conferencing SDK and the internal React Js web app.

1) Developed a participant engagement metrics system to record peer interaction throughout the session.
2) Worked on existing virtual background improvisation.
3) Developed a plugin for noise suppression.
4) Implemented multiple video and audio plugins architecture.
5) Developed a plugin to implement basic photo edits like contrast, saturation, etc.

3) Research Intern - Govt Of Haryana, Chandigarh — **Oct 2019 - Feb 2020**

Project - "Multi-Modal Framework for Monitoring Active Fire Locations (AFL) & Precision in Allied Agricultural Activities using CommunicationTechnologies".

- Contributed to an android project for authorities which detect fire due to stubble burning
- Implemented deep learning algorithms pipelines to be deployed on drones to detect active fire locations in the field and built a custom model for fire detection

4) Research Intern - Maivriks Lab UIET, Panjab University (Part-time) — **Feb 2020 - Dec 2020**

Project - "Development of 4G/5G based UAV Augmented Intelligent Monitoring and Surveillance System"

- Built deep learning models using CNN, RNN, LSTM, and Transformers, etc.. and worked on machine learning integration with drones, created models compatible with drone hardware for (Human activity recognition, gathering, detection) for live stream prediction for heights ranging from (1-6) meters.

Publications

1. *Dilated Convolution based RCNN using Feature Fusion for low-altitude aerial objects (under review)*
2. *Visual Exploratory Data Analysis of Covid-19 Pandemic presented at 5th IEEE ICRAIE 2020 conference, held at Poornima College of Engineering, Jaipur*
3. *COVID-19 Forecasting using machine learning models" for an upcoming book titled "Challenges and Opportunities for Deep Learning Applications in Industry 4.0 " to be published by Bentham Science*

Projects

- ***Twender***
  Tech stack - Flask, Tweepy, python, javascript, bootstrap
  Twender provides the user with an adumbration of the society's opinion in a single click. Twender app collects large numbers of feeds from Twitter based on searched topics, analyzes them, and classifies them into different polarities (positive, negative, neutral). It also provides the user with detailed reports of what's trending with the popularity meter. Other than that there is also a functionality to compare two things based on what's trending.

- **Goldman Sachs loggings**
  Tech stack - python, clustering (K-means,DBSCAN), jupyter notebook, Machine learning
  Logs are an integral part of Goldman Sachs' day-to-day operations. Logs help to monitor the behavior of thousands of applications that process millions of trades, help us manage risk, and support algorithmic trading. These applications generate hundreds of millions of log lines every day which engineers comb through to identify and rectify application failures. The overall goal of this problem is to identify the intent of each log line and group log lines with the same intent in the same cluster.

- **AEDRON**
  U.A.V Object detection Flask app (part of the research project)
  As a research intern under Maivriks labs, UIET Panjab University, I trained multiple object detection algorithms on a custom drone dataset for the project UAV monitoring and surveillance system and created a flask application for the same. In this application, the user can upload high-altitude captured images and videos and can also select various models to detect objects and compare their accuracy.

- **Human Activity Recognition Through Drones Using Body JointEstimates and Multi-Attention a.k.a Transformer**
  The approach involved using Open Pose to provide x and y coordinates of each human body joint detected in a frame through a top-down approach. Centroids of 18 body joint estimates are computed and given as parameters in a CSV file. The computations are done through image processing and deep learning-based model Openpose. The CSV files are then given input to various model classifiers (SVM, K means, Neural networks, and Transformer) for classification of different activities

- **Some Minor Projects**

  Bitcoin price prediction using RNN
  To predict the future price of bitcoin based on the past data using Recurrent Neural Network (LSTMs)
  Django blog application
  created a blog application using Django in which users can create accounts and post blogs.

Skills

Languages -	*Python, C++*
Familiar -	*Javascript, SQL*
Tech stack:	*Flask, Django, Machine learning, Deep learning, Git,*
	Linux, React JS, SQLite, Heroku, Competitive programming