

# Aditya Kumar

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## Education

### Guru Gobind Singh Indraprastha University

New Delhi, India

B.TECH. IN ELECTRONICS AND COMMUNICATION ENGINEERING

2017-2021

## Experience

### Sparrosense

RESEARCH INTERN

Gurugram, Haryana, India

June 2020 - PRESENT

- Working on Self-Supervised and Unsupervised Representation Learning for Classification and Object Detection.

### Humonics Global

DATA SCIENCE INTERN

Gurugram, Haryana, India

June 2019 - January 2020

- Worked on a project called Automating Car Insurance Claims using Deep Learning.
- Carried out research and built several classification, instance segmentation, object detection models with their training and data pipelines.
- Achieved the mAP of 0.8 for instance segmentation model of car parts and damage.
- Built inference pipelines to reduce speeds by 1.5x for models at production using TorchScript with C++ and JIT.

### IIIT Delhi

RESEARCH INTERN

New Delhi, Delhi, India

September 2018 - October 2018

- Worked on a Research Paper for analysing threat tweets specifically Acid attack threat tweets.
- Built pipelines for scraping thousands of tweets from twitter using different keywords and hashtags, preprocessing pipeline to filter and clean tweets and make it suitable for training LSTM model.

## Projects

### Training and Inference (<https://github.com/adityak2920/Traning-and-Inference>)

HUMONICS GLOBAL

- Code for training a classifier using fastai, converting to torchscript using PyTorch JIT and inference in C++ using OpenCV and torchscript.

### Faster RCNN (<https://github.com/adityak2920/FasterRCNN>)

PERSONAL

- Implementation of training and evaluation pipeline for Faster RCNN an object detection Algorithm using Torchvision. The implementation contains pipeline for VOT and Pedestrian Detection Dataset.

### Reddit Flair Classification ([https://github.com/adityak2920/reddit\\_flair\\_classification](https://github.com/adityak2920/reddit_flair_classification))

PERSONAL

- This project deals with scraping posts from reddit, preprocessing and modelling on the data and then deploying the classifier on heroku.

### Facial Recognition (<https://github.com/adityak2920/FacialRecognition>)

PERSONAL

- I have used OpenCV, Haar Cascades, KNN a ML algorithm and ipwebcam app for recognising faces using laptop webcam and android's phone camera.

### Semantic Segmentation (<https://github.com/adityak2920/semantic-segmentation>)

PERSONAL

- Implemented several Semantic Segmentation algorithms for a Kaggle competition called Severstal: Steel Defect Detection using different Py-Torch based libraries and used different methods for training and inference for the provided data.

### Neural Art (<https://github.com/adityak2920/NeuralArt-in-pytorch>)

PERSONAL

- Implementation of Neural Art(Style Transfer) in PyTorch in C++ and PyTorch.

## Skills and Courses

### Frameworks and Libraries

PyTorch, scikit-learn, OpenCV, PyTorch Lightning, FastAPI, NLTK, Detectron2, etc.

### Languages

Python, C++, C

### Other Skills and Areas

Computer Vision, Data Analysis, NLP, Deep Learning, Object Detection, Segmentation, Tracking, etc.

### Courses

CS231n Convolutional Neural Networks, Coding Blocks Machine Learning(offline), fastai course-v3, Udacity's Deep Learning