

# Samyak Rawlekar

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## EDUCATION

### New York University

*Master of Science in Computer Engineering, CGPA: 4.0/4.0*

New York

Sept. 2021 – May 2023

### Indian Institute of Technology Dharwad

*Bachelor of Technology in Electrical Engineering*

Karnataka

Aug. 2017 – May 2021

## EXPERIENCE

### Graduate Research Assistant

*Video Lab, New York University*

Sept 2021 – Present

*Brooklyn, NY*

- Working with a team of researchers on Image compression model focusing on keeping useful features for analytics.
- Fused the compression model with YOLO v5 Architecture and its variant.
- For the object detection task, mAP value without the compression model is 0.42, with compression mAP is 0.39.
- Currently working on multi-resolution and scalable object detection.

### Teaching Assistant

*Undergraduate Machine Learning, IIT Dharwad*

Aug 2021 – Nov 2021

*Dharwad, India*

- Prepared and graded the programming assignments for the course and lab.
- Held office hours to address students' queries in course material and labs.
- Hosted tutorial session on PYTHON and SCIKIT-LEARN.

### Research Intern

*CSIR-NEERI*

Aug 2020 – Jan 2021

*Remote*

- Spearheaded the project of time-series forecasting of the novel coronavirus daily cases.
- Incorporating the effect of environmental parameters on the rise and fall in day-to-day cases.
- Proposed the use of the multivariate time series model to improve the forecasting accuracy compared to the traditional epidemic models like SEIR and Modified SEIR.
- The model outperformed several univariate models like Sequence-to-Sequence, Bidirectional and Stacked LSTM.

### Intern

*Agrios Price Consulting Services Pvt Ltd.*

May 2020 – July 2020

*Remote*

- Aligned the Generative Adversarial Networks (GANs) team in building a network that can generate artificial data to address the imbalance in the dataset.
- The imbalance occurred due to readily available data of healthy diseased leaves, whereas scarce data of deficiency.
- Used Attention GAN Cycle GAN, among others, to perform image-to-image translation to balance the dataset.
- The new balanced dataset was used to improve the classification accuracy and identify the nutrient deficiency.

## PROJECTS

### Image Captioning

Jan 2020 – May 2020

- Developed a model that can generate a textual description of an image.
- Worked with the flickr8k dataset, where five captions were available for each image.
- For Transfer learning, the Inception V3 model was used.
- Achieved an average BLEU score of 0.59 on random samples.

### Speech Emotion Recognition

Jan 2020 – May 2020

- Developed a model to classify emotions based on audio tracks into one of the seven classes.
- The models used were the convolution neural network (CNN) and the time delay neural network (TDNN).
- CNN provided the best test accuracy of 85.81% .

## TECHNICAL SKILLS

**Languages:** PYTHON, MATLAB, C/C++

**Software Tools:** PYTORCH, TENSORFLOW, KERAS, LINUX

## RELEVANT COURSE WORK

**Graduate:** Computer Vision, Image and Video Processing, Machine Learning, Probability and Stochastic Processes

**Undergraduate:** Deep Learning, Speech Processing, Optimization Theory, Linear Algebra, Calculus