

# Anshul Mittal

me@anshulmittal.org • Google Scholar • LinkedIn • Github

---

## EDUCATION

---

- Indian Institute of Technology Delhi**, Delhi, India Dec 2019 – Present
- Google Ph.D. Fellow School of Information Technology
- Indian Institute of Technology Delhi**, Delhi, India Dec 2017 – Dec 2019
- Masters(MS Research) School of Information Technology
    - CGPA := 9.76 on a scale of 10
- Indian Institute of Technology Roorkee**, Uttarakhand, India Jul 2013 – Jun 2017
- Bachelor of Technology: Mojar in Civil Engineering with Minor in Computer Science and Engineering
    - CGPA := 8.5 on a scale of 10.0
- Ramjas Public School**, Delhi, India
- XII : 93% with Computer Science Mar 2013
  - X : CGPA := 9.6 on a scale of 10.0 Mar 2011

## PUBLICATIONS

---

- [1] *Rotation and Script Independent Text Detection from Video Frames using Sub Pixel Mapping*, [Anshul Mittal](#), P.P. Roy, R. Balasuramanian, Journal of Visual Communication and Image Representation. ([link](#))
- [2] *Multi-Oriented Text Detection from Video using Sub-Pixel Mapping*, [Anshul Mittal](#), P.P. Roy, R. Balasuramanian, Computer Vision and Information Processing, ([link](#)) Feb 2016.
- [3] *Data extraction from traffic videos using machine learning approach*, [Anshul Mittal](#), M. Gupta, I. Ghosh, Soft Computing for Problem Solving-2017, IIT Bhubaneswar, ([link](#)) Jan 2018.
- [4] *Sub-Scene Target Detection and Recognition using Deep Learning Convolution Neural Networks*, Suresh Merugu, Kamal Jain, [Anshul Mittal](#) and Balasubramanian Raman, International Conference on Data Science, Machine Learning & Applications Jan 2019.
- [5] *A Modified-LSTM Model for Continuous Sign Language Recognition using Leap motion*, [Anshul Mittal](#), Pradeep Kumar, Partha Pratim Roy, Raman Balasubramanian and Bidyut B. Chaudhuri, IEEE Sensors Journal Apr 2019.

## RESEARCH PROJECTS

---

### Indian Institute of Technology Delhi

- Extreme classification - supervisor: **Dr. Manik Varma** and **Dr. Sumeet Agrawal**
  - Developed first scalable (upto 20M) as well as accurate deep learning algorithm for the extreme multi-label classification. Jan 2018 – present

### Indian Institute of Technology Roorkee

- Computer Vision Lab - supervisor: **Dr. P. P. Roy** and **Dr. R. Balasubramanian**
  - Recognition of sign language for differently able. Jun 2016 – Oct 2016
    - A novel 4 gated LSTM was developed for real time sentence translation and segmentation.
    - A accuracy for 89.6% was achieved.
  - Word recognition using lexicon mapping Jan 2016 – May 2016
    - A moving window CNN-LSTM algorithm was developed for recognition using dictionary.
    - Accuracy of 94.3% and 91.2% was achieved in RIMES and IAM dataset respectively.
  - Rotation and script independent text detection from video frames using sub pixel mapping Dec 2015 – Feb 2016
    - A robust multi-script text recognition algorithm was developed with the accuracy of 94.1%.
    - Simultaneous 4 scripts were recognised and translated.
- Optimisation Lab - supervisor: **Dr. R. Chowdhury**
  - Urban area road network development using Genetic Algorithm. Jan 2016 – Apr 2016
    - Using NSGA-III and NEAT algorithm an self optimising road network system was developed.
    - Algorithm improved the efficiency of IIT-Roorkee road networks and increased economic profits by net 15%.
  - Assembly sequence optimization using Genetic Algorithm. Jan 2017 – Apr 2017
    - Using mutated connected component we optimized assembly for parallel workstations.
- Satellite Images and Remote Sensing - supervisor: **Dr. R. Balasubramanian** and **Dr. P. P. Roy**
  - Sub-Scene Target Detection and Recognition using Deep Learning Convolution Neural Networks. Jun 2015 – Oct 2016
    - First of it's kind, Differentiating further in 13 classes of 5 major land use category.
    - Accuracy of 89.6% was achieved using 2 pass differential CNN-LSTM.

## RESEARCH INTERSHIPS

---

## Indian Institute of Technology Madras

- Intelligent Transportation System - supervisor: **Dr. G. Ramadurai** and **Dr. I. Ghosh** May 2015 – Jun 2015
  - Vehicle Identification and counting from video.
    - Vehicle recognition software was developed for Indian traffic condition using dense CNN.
    - Software developed was used for calculating road parameters. ([Link to the video](#))

## Indraprastha Institute of Information Technology Delhi

- Infosys Center for Artificial Intelligence - supervisor: **Dr. C. Arora** May 2016 – Jul 2016
  - Recognizing First Person Actions from Egocentric Videos using LSTM Networks.
    - A novel convolution memory LSTM was developed for action recognition in video frames.
    - Accuracy of 92.5% was achieved in the UCF-101 dataset.

## WORK EXPERIENCE

---

**Consultant I**, Exl Analytics Jul 2017 – Dec 2017

## COMPUTER SKILLS

---

**PROGRAMING LANGUAGES:** C, C#, C++, PYTHON, PHP, JavaScript, R, LUA

**TOOLS AND TECHNOLOGIES:** Beagle Board-xm, Raspberry pi, L<sup>A</sup>T<sub>E</sub>X, SQL

**LIBRARIES:** Theano, CUDDA, CAFFE, OpenCV, Tensor Flow, PyTorch

## EXTRA-CURRICULAR ACTIVITIES

---

- **Students Innovation Club (SIC)**, IIT Roorkee Jul 2015 – Apr 2016
  - Convener, student body of SIC.
- **Conducted event called Femme Chevalier for women's safety**, SIC, IIT Roorkee, India. Oct 2014
- **Delivered a presentation on the awareness of rising pollution**, Project Citizen, India Jul 2009