

## Ashish Sethi

Flat no. 6, Aakriti Apartments  
I.P Extension, Patparganj Delhi - 110092  
Email id : [ashish18024@iiitd.ac.in](mailto:ashish18024@iiitd.ac.in)  
Mobile No.: +91 9868734481

**Objective:** Seeking full time opportunities in a research organization so as to hone my technical skills and attaining excellent standards while meeting organizational needs.

### ACADEMIC DETAILS

Examination	University/Board	Institute/School	Year	CPI/%
M.Tech(CSE-AI)	IITD	IITD	2018-2020	8.05
B.Tech(ECE)	GGSIPO	NIEC, Delhi	2014-2018	77.53
Class XII Board	CBSE	RPVV, Surajmal Vihar	2014	81.8
Class X Board	CBSE	RPVV, Surajmal Vihar	2012	9.6

### TECHNICAL SKILLS

- **Languages:** Python, Java, MATLAB,  $\LaTeX$
- **Packages & Libraries:** PyTorch, Scikit-learn, Scikit-image, OpenCV, Tensorflow, Keras,

### RELEVANT COURSEWORK

- Machine Learning
- Computer Vision
- Deep Learning
- Advanced Machine Learning
- Statistical Machine Learning
- Graduate Algorithms
- Artificial Intelligence
- Reinforcement Learning

### RESEARCH PROJECTS

- **Detecting Malnourishment in Children: Small Sample Size Problem in Deep Learning World**  
(Guide: Dr. Mayank Vatsa and Dr. Richa Singh, Jan'19 - Aug'20)
  - Developed new small size dataset of malnourished and healthy children using images from internet.
  - Developed deep learning based algorithm to work on small size dataset for malnourishment detection.
- **Infants Data Collection using Cradle (Cradle Project)**  
(Guide: Dr. Mayank Vatsa and Dr. Richa Singh, May'19 - Aug'20)
  - Designed 3D printing model of cradle to collect image dataset of newborn babies at hospital.
  - Created UI/UX of data collection app for cradle.
- **Deepfake Detection**  
(Guide: Dr. Saket Anand, Jan'20 - Jun'20)
  - Developed Metric based with self attention CNN architecture to detect real and fake videos.

- **NeoNet: A Deep CNN for 6-month Infant Brain MRI Segmentation**

(Guide: Dr. Richa Singh , Aug'19 - Dec'19)

- Segmentation of infant's brain is difficult as the intensity ranges of voxels in White Matter (WM), Grey Matter (GM) and Cerebrospinal Fluid (CSF) areas are mainly overlapping.
- Used residual based 3D-UNet architecture to segment the MRI images into mainly 3 regions.

- **Urbanization Detection**

(Guide: Dr. Mayank Vatsa , Aug'19 - Dec'19)

- Detect change in urbanization, using satellite images over two time period.
- Developed Siamese U-Net based segmentation network to detect the changes in two images.

- **Reinforced Co -Training**

(Guide: Dr. Sanjit K. Kaul , Jan'19 - May'19)

- Using reinforcement learning algorithm policy for unlabelled data selection in semi-supervised learning algorithm.
- We used co-training algorithm to train image classifier with labelled and unlabelled data.

- **Genetic CNN**

(Guide: Dr. Mayank Vatsa, Aug,18 – Dec,18)

- Using Genetic Algorithm find the best architecture design of CNN's network for classification.
- Developed two encoding techniques in genetic algorithm to find best architecture design.

## WORK EXPERIENCE AND INTERNSHIPS

- **Computer Vision Engineer at LightMetrics Technologies**

(June'20 - Present)

- Mainly working driver facing algorithms like face detection and pose detection on edge devices.

- **Applied Computer Vision Intern at DreamVu.Inc**

(Dec'17 - June'18)

- Worked on Camera calibration of omnistereo and omnidirectional cameras.
- Modeled SLAM and indoor mapping algorithms for autonomous vehicles using omnistereo data.

- **Summer Research Internship at Indian Institute of Technology Guwahati**

(Guide: Dr. Prithwijit Guha , June'17 - Aug'17)

- Worked on pedestrian tracking using mean shift tracking and background subtraction algorithms.
- Object detection using HOG features and Random forest.
- Complete the literature survey of object detection using non deep learning methods.

- **Winter Research Internship at Srujana Centre for Innovation, LV Prasad Eye Institute ,Hyderabad (Dec'16 - Jan'17)**

- Camera calibration of stereo camera setup.
- Developed 3D maps of Anterior Segment of eye.

- **Summer Research Internship at Cluster Innovation Centre, University of Delhi**

(Guide: Dr.Harendra Pal Singh, June'16 - Dec'16)

- Mainly Worked on 3D mapping of indoor environment using Microsoft Kinect in ROS.

## SCHOLASTIC ACHIEVEMENTS

- Project "Book reader for visually impaired" reached Quarter finals of Texas Innovation Challenge 2016. (Nov'16)
- I conducted Image Processing and Basic MATLAB training program for seven days with my professor at HMR college (GGSIPU) and instructed around 50 students. (Aug'16)
- Selected as best project exhibitor in TECHNORAX conducted by IEEE-NIEC. (Oct'15)
- Project on "Automatic Smart Wheelchair" got selected in EPICS under IEEE
- Participated in ABU ROBOCON 2016.

## REFERENCES

- Mayank Vatsa, PhD  
Professor and Swarnajayanti Fellow  
Project Director, iHUB Drishti  
Technology and Innovation Hub on Computer Vision and AVR under NM-CPS  
IIT Jodhpur, India  
Adjunct Faculty, WVU, USA  
<http://home.iitj.ac.in/~mvatsa/>  
<http://iab-rubric.org/>
- Richa Singh, PhD  
Professor, IIT Jodhpur, India  
Associate EiC, Pattern Recognition  
Vice President - Publications, IEEE Biometrics Council  
Adjunct Faculty, WVU, USA and IIIT Delhi, India  
<http://iab-rubric.org/>