

# Mansi Uniyal

2nd Year Undergraduate  
Department of Electrical Engineering  
IIT Kharagpur

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## Academic Qualifications

Year	Degree/Certificate	Institute	CPI
2019 - Present	B.Tech	Indian Institute of Technology, Kharagpur	9.22/10
2019	CBSE(XII)	Delhi Public School, Indirapuram, UP	94.8/100
2017	CBSE(X)	Delhi Public School, Indirapuram, UP	10/10

## Publications

(April 2021)

Presented and Co-authored the research paper at the **2nd International Conference on UNMANNED AERIAL SYSTEMS in GEOMATICS-2021, India**, on the topic of **Deep learning based architectures for semantic segmentation of aerial imagery**

## Key Projects

### Eye movement type categorization

(Oct 2020 - Jan 2021)

Professor: **Prof. Jhareswar Maiti**, Professor at Department of Industrial and Systems Engineering, IIT Kharagpur

- Literary surveyed on **EEG signals, GWO algorithm**, Eye movement types
- Worked on sequential time series data of the eye, predicting the categories of fixation points
- Successfully implemented and proposed **Deep BLSTM-LSTM** model architecture

### Development of GAN algorithms in generation of SR from HR satellite based images

(Oct 2020 - Dec 2020)

Professor: **Dr.Bharath H.Ahithal**, Ass. Professor at Ranbir & Chitra Gupta School of Infrastructure Design and Management

- Implemented **SRCNN, Bicubic Interpolation** as baseline models for image super-resolution
- Replicated **EEGAN**(Edge Enhancement Generative Adversarial Network) with implementation on **HPC** (High-Performance Computing)

### Remote sensing image segmentation for building footprints

(Sept 2020 - Dec 2020)

Professor: **Dr.Bharath H.Ahithal**, Ass. Professor at Ranbir & Chitra Gupta School of Infrastructure Design and Management

- Built a CNN based, **Modified UNet** model with transfer learning on wide range of Geo-spatial domains
- The proposed model outperformed other baseline models: **ResNet, VGGNet, SegNet, UNet**
- Worked on **Morphological** methods of Erosion and Dilation

## Experiences

### Machine Learning Engineer at Chi SquareX

(Jan 2021 - Present)

- **Neural Style Transfer:** Enhanced results on SimpleNet by data augmentation using CycleGAN
- **Aircraft optimization:** Developed heuristic solution approach for a weekly schedule with minimized maintenance cost
- **Head Gesture Recognition:** Worked on classification for head gestures using signals from videos
- **Action Classification:** Designed on image extraction for action-prediction from trimmed video clips
- **Object Detection:** Implemented transfer learning on YOLO model for object detection

### AI intern at Jalla Labs Private Limited

(Dec 2020 - Feb 2021)

- Built an Intelligent Recruitment System using **NLP** (Natural Language Processing)
- Extracted information from various file formats of resumes using **Non-OCR** Techniques followed by data structuring
- Customised **NER** (Name Entity Recognition) for organizations & names, along with query based sorting of resumes on skill set

## Technical Skills

- **Programming Languages:** Python, C++, C, R
- **Software and Libraries:** Keras, TensorFlow, PyTorch, SpaCy, NLTK, QGIS, MobaXterm
- **Skills:** Deep Learning, Machine Learning, Data Science, Data Analysis, Probability & Statistics, Computer Vision, NLP

## Relevant Courses

Computer Vision, Winter School of AI & Robotics Machine Learning, Stanford University, Coursera Programming & Data Structure, IIT Kharagpur	Statistics with Python, University of Michigan, Coursera Deep learning Specialization, Stanford University, Coursera Algorithms, IIT Kharagpur
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## Scholastic Achievements

- Secured **All India Rank 3214** in **JEE Advanced, 2019** among the 1.65 Lakh shortlisted candidates
- Secured **All India Rank 1261** in **JEE Mains, 2019** among the 11.47 Lakh candidates with **99.92** percentile
- Secured **All India Rank 65** in **JEE Mains (B.Arch), 2019**, among the 6.35 Lakh candidates with **99.97** percentile
- Secured a **zonal rank of 4**, and **international rank of 67** at **NSO** (National Science Olympiad), 2018-19
- Secured a **zonal rank of 5** at **IMO** (International Mathematics Olympiad), 2018-19
- Cleared **Pre-RMO** and **RMO** (Regional Mathematical Olympiad) (DELHI region), 2017-18 and 2019-20
- Cleared **INMO** (Indian National Mathematical Olympiad), 2017-18

## Positions of Responsibility

- General Secretary at International Relations Cell, IIT Kharagpur (May 2021 - Present)
- Student Member at Kharagpur Data Analytics Group, IIT Kharagpur (Nov 2020 - Present)
- Student Member at International Relations Cell, IIT Kharagpur (Sept 2020 - May 2021)
- Student Member at Institute Wellness Group, IIT Kharagpur (Aug 2020 - Present)