

# Deepanshu Jindal

Senior Undergraduate  
Computer Science & Engineering  
Indian Institute of Technology, Delhi

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## ACADEMIC DETAILS

Year	Degree	Institute	CGPA/Percentage
2016-Present	B.Tech, Computer Science & Engineering	Indian Institute of Technology Delhi	<b>9.913</b> <b>Institute Rank 1</b>
2016	Class XII, CBSE	S. D. Public School	98.6%
2014	Class X, CBSE	S. D. Public School	10.00

## SCHOLASTIC ACHIEVEMENTS

- Awarded **IIT Delhi Merit Prize** in every semester for being in the top 7 percentile of students.
- Secured **All India Rank 1** in Joint Entrance Exam Mains - 2016 among 1.2 million candidates.
- Secured **All India Rank 53** in Joint Entrance Exam Advanced - 2016 among 178,000 candidates.
- Student attendee at **Cornell, Maryland, Max Plank Research School 2019** at MPI-SWS, Germany
- Awarded KVPY Fellowship by *Dept. of Science & Technology, Govt. of India*
- Awarded Certificate of Excellence for scoring 100 Marks in Physics and Mathematics by *HRD Ministry*

## WORK EXPERIENCE

### Strategist, Limestone Team, Tower Research Capital

*Aug 2020-Present*

- Responsible for developing quantitative strategies for High Frequency Trading.

### Strategy Intern, Limestone Team, Tower Research Capital

*May-July 2019*

*Summer Internship*

- Built models to predict market signals to generate buy-sell triggers for an aggressive trading strategy
- Employed variety of feature selection, data sampling techniques to efficiently use long market histories
- Successfully trained an ensemble model to give 0.95+ insample-outsampling performance correlation

### Research Intern, ChironX

*Nov-Dec 2018*

*Independent Winter Internship*

[Project repo](#)

- Worked towards building deep learning techniques for medical diagnosis from Retinal Fundus images
- Designed a U-Net based deep CNN for blood vessel segmentation from high resolution fundus images
- Segmented vessel map and background fundus are used for detecting clinical features by downstream models

### Summer Research Intern, National University of Singapore

*May-Jul 2018*

*Under Prof. Ben Leong, Systems & Networking Lab, School of Computing*

[Project repo](#)

- **P4-trafficool**: An open-source tool for P4 developers to aid custom protocol packet generation and parsing
  - Generates plugin code for network tools to support custom packet formats defined in P4 program
  - Currently supports code generation for Wireshark, Scapy, MoonGen, PcapPlusPlus

*[Poster](#) for the tool accepted at ACM Symposium on SDN Research - 2019, San Jose*

## RELEVANT COURSES

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Reinforcement Learning, Natural Language Processing, Machine Learning, Artificial Intelligence, Discrete Mathematics, Parallel Computing for Deep Learning, Linear Algebra, Linear Optimization, Prob. & Stochastic Processes

## PROJECTS

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### Neural Networks for Symbolic Reasoning

July 2019 - *Present*

*B.Tech. Thesis under Prof. Mausam and Prof. Parag Singla, IIT Delhi*

- Recently many neural architectures have been proposed for reasoning over symbolic variables. However, training these networks using standard loss optimization techniques poses many problems to generalization.
- We are working towards developing an RL based training regime that is fine-tuned for symbolic output spaces.

*Submission under review*

### DeepGo: AlphaGoZero implementation for low resource training

Oct 2019 - Nov 2019

*Prof. Parag Singla, Course Project for Reinforcement Learning*

- Open-source implementation with customized exploration strategy for MCTS enabling model training with limited compute and memory

### Deep Learning for inference over Markov Networks

Jan 2019 - May 2019

*Prof. Mausam and Prof. Parag Singla, IIT Delhi*

- Developed an *anytime algorithm* to do MAP inference over Markov Networks with varied sizes
- Used Graph Attention Networks to build a deep learning model that could generalize over graph-size
- Model predictions were used to provide initialization state to MaxWalkSAT algorithm for MAP inference

### Style Transfer to combat Hate Speech

March 2019 - May 2019

*Prof. Mausam, Course project for Natural Language Processing*

- Worked towards addressing the problem of hate speech on social media using Style Transfer techniques
- Used Vocabulary Augmentation to build lexicon to remove semantically inconsequential abusive words
- Used style transfer models to reduce hatred in text while preserving meaning to the extent possible

### Secure Access Logging and Vulnerability Analysis

Sep 2017 - Nov 2017

*Samsung IoT Lab IIT Delhi*

- Developed a logging system in IoTivity stack to log access requests made to the present resources
- Built a Vulnerability Analysis Interface to identify vulnerabilities from logs based on admin-defined rules

### Hand Gesture Controlled Robot

Sep 2016 - Jan 2017

*Robotics Club, IIT Delhi*

- Designed and fabricated a differential drive hand-gesture controlled robot capable of transporting weights
- Secured Second Runner-up position at the nationwide event Magneto, organised by IIT Madras

## CO-CURRICULAR ACTIVITIES

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- **Teaching Assistant** for NPTEL course **Introduction to Artificial Intelligence**
- **Teaching Assistant** for **Data Structures and Algorithms** under Prof. Subodh Kumar, IIT Delhi
- **Teaching Assistant** for NPTEL course **Introduction to Parallel Programming using OpenMP**
- **Chair, ACES ACM IIT Delhi Student Chapter** - Computer Science Departmental Society
- **Convenor, 2016 entry Computer Science Batch** (April, 2018 - May, 2019)