

# Sagnik Mukherjee

Indian Institute of Technology – Kanpur

## Education

Year	Degree	Institute	CPI/Grades
2015	Secondary Exam	RKMV Narendrapur	92.5/100
2017	Higher Secondary Exam	RKMV Narendrapur	93.4/100
2021(expected)	B.Tech, Electrical Engineering	IIT Kanpur, India	9.6/10(6th Sem)

## Awards and Achievements

- **Academic Excellence Award**, IIT Kanpur, on both freshman and sophomore years
- **IUSSTF-Viterbi** research fellowship Program, conducted by USC, awarded to top 15 applicants
- **SURGE** research fellowship, conducted by IIT Kanpur, awarded to top 150 applicants
- **33rd** in Engineering joint Entrance Examination, WBJEE, West Bengal, 2017
- **JBNSTS**(Jagadish Bose National Science Talent Search) Junior Scholar for basic sciences, 2016
- **Top 1%** in National Standard Examination in Physics, 2016

## Internship Experience

### AutoSumm - Automated DL Models for Text Summarisation

Adobe, India

Mentored by Dr. Niyati Chhaya, Sr. Research Scientist

May 2020 - Jul 2020

- Worked on a research project that combines AutoML techniques for Natural language processing tasks and built a live demo with a deployed prototype for our solution. Our solution leverages multiple machine learning and deep learning techniques to achieve near **SOTA performance** by **auto-generated** models
- Was responsible for extensive experiments, testing the utility and the validity of the developed framework across datasets and multiple model parameters
- Worked in a team of 4 interns and leveraged a complex set of deep learning tools and libraries for this implementation
- With extensive use of django, CSS and html, we built a live demo and presented the solution approach in front of adobe business leaders and scientists
- The work will be submitted to **AAAI 2021** and will be submitted for patent as per Adobe policies

## Academic Projects

### Implementation of a Probabilistic Taxonomy

IIT Kanpur, India

Mentored by Dr. Arnab Bhattacharya, Associate professor

Feb 2019 - May 2019

- Implemented the **syntactic extraction** process, Which finds out the super concepts and relevant sub concepts from every sentence of the corpus in English language
- Aimed at the information extraction process which is based on **probabilistic extraction of IsA pairs** (Defining criteria for super and sub concepts) from each sentence

### The Firefighter Problem, Graph Theory

Indian Statistical Institute, Kolkata

Mentored by Dr. Sandip Das(ACMU Unit ISI Kolkata)

May 2018 - Jul 2018

- Studied the preliminaries of graph theory and solved some warm up problems. Made an effort to solve the Firefighter Problem - a well known unsolved optimization problem in the domain of graph algorithms
- For infinite square grids we were able to show that the surviving rate is one fourth

### Minimum path isolation problem for 3-D grid graphs

IIT Kanpur, India

Mentored by Dr. R.Tewari, Associate professor

Feb 2019 - May 2019

- Proved the existence of 0 cycle in case of linear edge weight functions that are skew-symmetric in coordinates.
- The same thing for quadratic boils down to converting the attained equations to linear Diophantine equations

## Relevant Coursework

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Fundamentals of Computing	Linear Algebra and ODEs	Complex Variables
Machine Learning for Signal Processing	Probability and Statistics	Data Structure and Algo.
Stat. and AI techniques in Data Mining	Signals, Systems, Network	Intro. to Linguistics
Principles of Communications	Microelectronics-I	Partial Differential Equations

## Online Courses

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Deep Learning Specialization      NLP Specialization      Tensorflow in Practice (Specialization)

## Key Skills

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Programming Languages.....

C • C++ • Python • GNU Octave • Bash • LATEX • Git

Machine Learning Libraries.....

Pytorch(Adv) • Keras(Adv) • Tensorflow(Inter) • Spacy(Adv) • NLTK • Matplotlib(Adv) • Numpy(Adv)  
• Huggingface (Inter)

Languages Known.....

Bengali • Hindi • English • Sanskrit

Extracurricular.....

Public Speaking • Digital Painting • Table Tennis • Chess

## Responsibilities Held

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### Institute Counselling Service

*Core Team Member, Operations Team*

**IIT Kanpur, India**

*Apr 2019 - Apr 2020*

- Successfully planned, envisioned and executed a 2-day training workshop for the selected student guides, 7-day orientation program for over 950 students and their parents
- Coordinated with 8 students, 3 counsellors, 2 psychiatrists and faculty to provide academic, financial and emotional support to students
- Selected and led a team of 174 student guides from over 600 candidates who had applied for the same
- In the entire tenure guided over 12 students out of academic probation with proper emotional and academic support
- Conducted various sessions spreading mental health awareness all over the campus

### Institute Counselling Service

*Student Guide*

**IIT Kanpur, India**

*Apr 2019 - Apr 2020*

- Helped 6 students adjust to the campus life by actively providing emotional and academic support
- Supervised group movements during academic registration, campus tours, health survey and other sessions during orientation

## Miscellaneous

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- Active contributor to technical platforms like Stack Overflow and Pytorch Forum