

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)

Majors and Minors

- Major in Electrical Engineering, IIT Kanpur
- Minor in Machine Learning and Applications, IIT Kanpur
- Minor in Linguistic Theory, IIT Kanpur

Awards and Achievements

- Academic Excellence Award, IIT Kanpur, on both freshman and sophomore years
- IUSSSTF-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 libararies 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 is publication ready 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

Teaching Experience

- Teaching Assistant(current), Machine Learning for Signal Processing(EE698V), IIT Kanpur
- Teaching Assistant(current), Fundamentals of Computing(ESC101), IIT Kanpur

Relevant Coursework

Fundamentals of Computing
 Machine Learning for Signal Processing
 Stat. and AI techniques in Data Mining
 Stat. Natural Language Processing

Intro. To Machine Learning
 Probability and Statistics
 Signals, Systems, Network
 Linear Algebra and ODEs

Data Mining
 Data Structure and Algo.
 Intro. to Linguistics
 Optimization for Big Data

Online Courses

Deep Learning Specialization NLP Specialization Tensorflow in Practice (Specialization)

Key Skills

- 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

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

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