

# SHAURYA GOYAL

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## Education

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### Indian Institute of Technology, Kharagpur

2020 – Ongoing

*Integrated Master of Science in Economics*

CGPA: 8.74

Micro - Specializations in Optimization Theory (Ongoing) and Artificial Intelligence (Ongoing)

Grade 12 (HSC), score: 92%

2020

Grade 10 (ICSE), score: 95%

2017

## Research Experience

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### IIT Kharagpur

July 2021 – Ongoing

*Undergraduate Student Researcher*

*Graph Signal Processing*

- Developing faster, more numerically stable and accurate algorithms for graph fourier transform and graph principal component analysis

### IIT Kharagpur

April 2021 – Ongoing

*Undergraduate Student Researcher*

*Evolutionary Biology*

- Conducting a phylogenetic analysis of cells using genomic data to understand whether an inside-out or outside-in model is favourable and to understand how mitochondria originated in eukaryotic cells

## Projects

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### Conditional GANs (Guided Reading Project)

July - August 2021

- Did a directed reading on the theory of cGAN models in recent papers with an emphasis on face generation and other imaging purposes. Also looked briefly at dynamical systems and stochastic approaches to GANs

### Modelling Global Warming

June 2021

- Used regression analysis to model how the temperatures have changed and used it to predict future changes

### Robot Simulation

May 2021

- Wrote a program that can simulate the movement of a floor cleaning robot in a room with obstacles

### Online News Feed Tracker

April 2021

- Wrote a program that monitors and filters online news and displays articles matching the user's interests.

## Selected Relevant Coursework

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Monte Carlo Methods (PG), Reinforcement Learning (CS 234 Stanford), Linear Programming, ML for Genomics (6.047 MIT OCW), Probability, Statistics, PDE, Psychology, Numerical analysis

## Technical Skills

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**Programming:** Python, MATLAB, C

**Other:** L<sup>A</sup>T<sub>E</sub>X, HTML, CSS, Autocad, MS-Office

## Volunteer Work

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### Teacher(Independent)

October 2019 – December 2020

- Taught 2 under privileged kids in my locality of grade 5 (to grade 6) math, science and English.
- Led to improved understanding and skill and their grade also improved by nearly 20 percent.

## Leadership / Extracurricular

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- Currently involved with co-founding a Neurotech student research group at IIT, Kharagpur
- Active member of Biotechnology Reading group and Debating Society, IIT Kharagpur
- Selected as Times Scholar 2020 by Times of India Group and awarded a scholarship (Declined)
- Silver Medal in National Taekwondo Championship and 1st Dan Black Belt

**Other Interests:** Guitar, Hiking, Running, Reading, Cooking, Rock music, Star Wars