# Utkarsh Patel

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## Education

- **Indian Institute of Technology Kharagpur** — Kharagpur, India
  *Bachelor and Master of Technology (Dual Degree); GPA* 9.47 / 10 — *Jul 2018 - May 2023 (Expected)*
  *Major: Electronics & Electrical Communication Engineering; Minor: Computer Science*
- **Shah Faiz Public School** — Ghazipur, India
  *All India Senior School Certificate Examination (CBSE); Marks* 94.8% — *May 2017*
- **Shah Faiz Public School** — Ghazipur, India
  *All India Secondary School Examination (CBSE); GPA* 10 / 10 — *May 2015*

## Relevant Coursework

Algorithms (T/L), Machine Learning (T), Programming and Data Structures (T/L), Neural Networks (T), Probability and Stochastic Processes (T), Matrix Algebra (T), Speech Processing (T/L)

## Key Projects

- **Logical Fallacy Detection to Defend against Online Hate Speech** — *Feb 2021 — Present*
  *Guide — Prof. Mainack Mondal and Prof. Animesh Mukherjee* — *Natural Language Processing*
  - Created a Corpus of posts related to Politics from online debate portals and social media using Web Scraping libraries like urllib, scrapy, BeautifulSoup, etc.
  - Implemented a Semi-Supervised GAN based learning for Robust Identification of Hate Speech
  - Used BERT as the Discriminator of the GAN; our model outperforms the classical BERT when both are fine-tuned on a small batch (less than 20%) of labeled examples

- **Targeted Aspect-based Sentiment Analysis** — *Dec 2020 — Jan 2021*
  *Self Project* — *Natural Language Processing*
  - Performed Aspect-based Sentiment Analysis by transforming the task into Sentence-pair Classification task via constructing auxiliary sentences from target-aspect pairs
  - Used pre-trained BERT model and fine-tuned it on SentiHood data set
  - Achieved Aspect F1-score of 0.90 and Sentiment AUC of 0.986

- **Identification of Autism Spectrum Disorder** — *Aug 2020 — Dec 2020*
  *Guide — Prof. Debasis Samanta* — *Machine Learning*
  - Worked on the ABIDE data set to extract and process resting state functional MRI data
  - Used correlation-based approach to determine functional connectivity between ROIs
  - Implemented various machine learning models to classify subjects as autism (ASD) patients and typically developing (TD) participants; achieved test accuracy of 0.68 and 0.65 using SVM and KNN classifier respectively

## Achievements

- **Academic**
  - Holding **Department Rank 1** among the dual degree students of E&ECE department
  - **Changed Department** to E&ECE by acquiring **9.69 CGPA** in the first year

- **Google Coding Competitions**
  - **Kick Start 2021 Round C**: Global Rank **70** among around 12k contestants
  - **Kick Start 2021 Round A**: Global Rank **814** among around 20k contestants

## Technical Skills

- **Programming Languages**: C++, Python
- **Libraries / Frameworks**: TensorFlow, Keras, PyTorch, Scikit-learn, Pandas, LIME, BeautifulSoup, NetworkX
- **Softwares / Platform**: MATLAB, Git, LaTeX