Utkarsh Patel

C-231, Patel Hall of Residence, IIT Kharagpur, WB - 721 302

https://utkarsh.me/

imutkarshpatel@gmail.com

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*

Achievements

- **Department Rank 1** among the dual degree students of E&ECE department — *Jun 2021*
- **Global Rank 70** among around 12k contestants in **Google Kick Start 2021 Round C** — *May 2021*
- **Department Change** to E&ECE by acquiring **9.69 CGPA** in the first year — *Jul 2019*

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 in PyTorch
  - 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

Technical Skills

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

Relevant Coursework

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

Extracurriculars

- Embedded Team Member, Hardware Modelling at Patel Hall, IIT Kharagpur — *2020*
- Participated in the Dramatics General Championship being part of Patel Hall's Choreography Team — *2019*