Utkarsh Patel

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Education

- **Indian Institute of Technology (IIT), 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

- Holding **Department Rank 1** among the dual degree students of E&ECE department — *Apr 2021*
- Acquired **Rank 814 (Round A)** in Google Kick Start 2021 — *Mar 2021*
- **Changed Department** to E&ECE by acquiring **9.69 CGPA** in the first year — *Jul 2019*

Internship

- **Complex Networks Research Group (CNeRG), IIT Kharagpur** — Kharagpur, India
  Research Intern — *May 2021 — Present*
  - Developing models that could predict whether the following comment will incur ad-hominem fallacy or not, given the sequence of preceding comments in the thread
  - Currently, working on GAN-BERT that extends the fine-tuning of BERT-like architectures with unlabeled data in a generative adversarial setting
  - Using LIME to visualize individual predictions and to identify a set of words imposing ad-hominem fallacy

Projects

- **Logical Fallacy Detection to Defend Against Online Hate Speech** — *Feb 2021 — Present*
  Guide — Prof. Mainack Mondal and Prof. Animesh Mukherjee — *Natural Language Processing*
  - Developing models that could predict whether the following comment will incur ad-hominem fallacy or not, given the sequence of preceding comments in the thread
  - Currently, working on GAN-BERT that extends the fine-tuning of BERT-like architectures with unlabeled data in a generative adversarial setting
  - Using LIME to visualize individual predictions and to identify a set of words imposing ad-hominem fallacy

- **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 classification algorithms 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, Java
- **Libraries / Frameworks**: TensorFlow, Keras, Scikit-learn, Pandas
- **Softwares / Platform**: Apache Hadoop, Apache Spark, MATLAB, Git, LaTeX

Relevant Coursework

- **Completed with Laboratory Component**: Algorithms, Programming and Data Structures
- **Completed**: Machine Learning, Probability and Stochastic Processes, Matrix Algebra
- **Online Courses**: CS 224n: NLP with Deep Learning, Deep Learning Specialization