

# Utkarsh Patel

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

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## EDUCATION

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- **Indian Institute of Technology (IIT), Kharagpur** May 2023 (Expected)  
*Bachelor and Master of Technology; Electronics Engineering and Computer Science* GPA — 9.47 / 10
- **Shah Faiz Public School, Ghazipur** May 2017  
*All India Senior School Certificate Examination* Marks — 94.8%
- **Shah Faiz Public School, Ghazipur** May 2015  
*All India Secondary School Examination* GPA — 10 / 10

## KEY PROJECTS

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- **Logical Fallacy Detection to Defend Against Online Hate Speech** Feb 2021 — Present  
*Guide — Prof. Mainack Mondal and Prof. Animesh Mukherjee* Natural Language Processing
  - Developing frameworks and models that could predict the typology of ad-hominem fallacies contained in a post given the sequence of preceding posts in the thread
  - Extracting posts from popular subreddits and performing large-scale annotation study to generate our data set
  - Decoding the dynamics of fallacies in arguments by reconstructing word weight heat map from the attention matrix of the model
- **Targeted Aspect-based Sentiment Analysis** Dec 2020 — Jan 2021  
*Guide — Prof. Animesh Mukherjee* 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

## ACHIEVEMENTS

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- Holding **Department Rank 1** among the dual degree students of E&ECE department Feb 2021
- Acquired **Rank 832 (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

## TECHNICAL SKILLS

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- **Programming Languages:** C++, Python, Java
- **Libraries / Frameworks:** PyTorch, TensorFlow, Keras, Scikit-learn, Pandas
- **Machine Learning / Data Analysis:** Deep learning, including CNNs and RNNs; Machine learning, including SVM, KNN, Decision Trees and Bayes
- **Softwares / Platform:** Apache Hadoop, Apache Spark, MATLAB, Git, L<sup>A</sup>T<sub>E</sub>X

## RELEVANT COURSEWORK

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- **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

## OTHER PROJECTS

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- **Machine Learning** : Implemented Regression Decision Trees, Naive Bayes classifier, SVM and MLP classifier