






Pratiksha Kanwar

Third Year Undergraduate

Department of Materials Science and Engineering

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Academic Details

- Bachelor of Technology (B.Tech)**  
2022-current  
Indian Institute of Technology, Kanpur;  
CGPA:6.0
- CBSE (XII)**  
2021  
Delhi Public School, Korba  
Percentage: 91.2%
- ICSE (X)**  
2019  
St Mary's Higher Secondary School,  
Jharsuguda  
Percentage: 85.3%

Relevant Coursework

- Data Structures and Algorithms (\*online)
- Fundamentals of Computing
- Computational Methods in Materials Science and Engineering
- Linear Algebra and Ordinary Differential Equations
- Engineering Graphics
- Google UX Design

Technical Skills

- Programming Languages :** Python, C++, OCaml, CSS, SQL
- Libraries & Packages :** TensorFlow, NumPy, Pandas, Keras, Scipy, NetworkX, Matplotlib
- Utilities :** Jupyter Notebook, MS Excel, MS PowerPoint, Latex, Fusion 360, Canva, Sketch, LaTeX, AutoCAD

Core Competencies


UI/UX

Machine Learning

Debugging

Web Development

Research Experience

Evolutionary Pressures in Human Languages  May'24–Present


Mentor: Prof. Himanshu Yadav, Department of Cognitive Sciences, IIT Kanpur

Embarked on the **largest scale quantitative study** in linguistics to explore evolutionary pressures in human languages

Responsibilities:

- Developed a **Python** parser with **Stanza** library, handling **350+** sentences in one single operation.
- Conducted **syntactic** analysis using RLA and the **os** and **io** modules, focusing on dependency length constraints.
- Created pipeline to visualize dependency trees using nodes and edges in **LaTeX** and generated random baselines.
- Achieved **100%** arity in RLA across all dependency lengths ,significantly contributing to **research publications** and developing predictive models for changes in language structures, which will shape future linguistic research

Key Projects

Sentiment Analysis for Tweets using CNN, RNN  May'24–June'24

Tools: Python, Jupyter Notebook

Responsibilities:

- Employed tokenization and padding for text preprocessing on a dataset comprising **10,314** tweets using the Keras library.
- Created and implemented a sentiment analysis system utilizing CNN and RNN models achieving accuracies of **95.30%** and **99.52%**.
- Utilized **CNNs** for local patterns and **RNNs** for sequential dependencies, training each model with 10 epochs for better accuracy.

Netflix Clone Web Application  May'24–June'24

Tools: HTML, CSS

Responsibilities:

- Developed a clone of **Netflix** login page, replicating its design, layout, and user interface for a visually striking appearance.
- Focused on creating a responsive user interface using robust HTML and **CSS** to ensure seamless user experience across all devices
- Implemented dynamic **accordion** behavior for FAQ items, toggling icons and expanding/ collapsing content on click using Javascript.

Type Theory and Functional Programming  May'24–July'24

Tools: SWI Prolog, Swish, OCaml Programming

Responsibilities:

- Created **10+** predicates for computing reflexive, symmetric, transitive closures, operations and power sets with optimized logic.
- Implemented a type checker in **Prolog** for a custom expression language supporting **15+** operators and **20+** expression types.
- Developed an efficient **OCaml** tokenizer for a toy calculator, supporting **10+** token types and tested with **7+** comprehensive test case.