

Anup Roy

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EDUCATION

Year	Degree/Certificate	Institute	CPI/%
2020-2022	MS-Computer Science & Engg.	Indian Institute of Technology, Kanpur	8.22/10
2015-19	B.Tech Information Technology	Government College of Engg. and Leather Technology	8.43/10

EXPERIENCE

- **Research Scientist @ ETS-Research Institute** **Nov '22 - Present**
 - **LLMs for Automated Essay Scoring (AES)**: Explored T5 and LLaMA models to enhance AES accuracy.
 - **Tweaking T5 for Classification/Regression**: Fine-tuned T5 to improve essay categorization and scoring.
 - **Implementation of AES Research**: Applied research findings to develop advanced AES models.
 - **Model Evaluation and Optimization**: Conducted rigorous evaluations to optimize AES model performance.
- **Data Scientist @ Ascendum Solutions** **Aug '22 - Nov '22**
 - **Graph-based ML for Medical Documents**: Researched graph neural networks (GNNs) for medical data.
 - **Graph Attention-based Classification**: Developed GAT-based methods for better document classification.
 - **Performance Benchmarking**: Evaluated and benchmarked models to ensure accuracy and efficiency.

PUBLICATION

- **IIJT Journal** **IIJT**
 - Worked on Text classification basically utterance classification on Fidelity provided data using a **Graph-based** classification model.
 - Working on implementing research paper Induct-GCN and Induct GAT(Our Model)
 - Our Model has Beaten Three Short Text SOTA Score NICE-45, TagMyNews, NICE-2.
 - Build an Inductive Graph Attention network that beats transformer-based F1 score, which got an F1 score of 83.08 on a proprietary dataset provided by Fidelity Investment.
- **ACL Conference** **ACL Paper**
 - Our submission concentrated on three subtasks: Legal Named Entity Recognition (L-NER) for Task-B, Legal Judgment Prediction (LJP) for Task-C1, and Court Judgment Prediction with Explanation (CJPE) for Task-C2.
 - Our team obtained competitive **World rankings of 15th, 11th, and 1st** in Task-B, Task-C1, and Task-C2, respectively, as reported on the leaderboard Semeval Competition.

INTERNSHIP

- **Amazon | Applied Scientists-Intern** *(May'22-Aug'22)*
 - Worked On **Building Multi-domain model for Address text (Last Mile Use Cases)**.
 - Explored Large Language Model like T5, Llama and Falcon model.
 - Able to deliver results related to multi-task fine tuning of LLMs and its performance compared to base line results.
 - Delivered Llama multi-task fine tuning performed better on address matching task than address parsing which beats baseline score for Washington state addresses.

THESIS

- **Multilingual Named Entity Recognition and Part of Speech Tag** Guide : Prof. Arnab Bhattacharya
 - Design and development of **Multilingual NER** and **POS** systems for multiple Indian languages, mainly **Hindi, Bengali, Telugu, Malayalam, and Marathi**, with an emphasis on detecting semantically ambiguous and complex things in brief and low-context scenarios is the objective of this project.
 - Experimented different models namely **Bi-LSTM CRF**, **Bi-LSTM Attention CRF**, and **mBERT-CRF** compared using the **weighted F1-Score**
 - mBERT-CRF has done exceptionally well and provided accuracy comparable to or exceeding state-of-the-art.

SKILLS

- **Languages Known** : C/C++, Python, MySQL, ROS
- **Tools and Utilities** : Linux, Windows, Latex, Nvidia Jetson Nano
- **Libraries** : Gensim, NLTK, Spacy, Pandas, Numpy, Scikit-learn, Pytorch, OpenCV, MediaPipe, Tensorflow, Keras, PEFT Techniques, Hugging Face