

Laiba Mehnaz

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EDUCATION

New York University, Tandon School of Engineering

May 2023

Master of Science in Computer Science

Relevant coursework: Design and Analysis of Algorithms, Machine Learning, Deep Learning

Delhi Technological University, New Delhi, India

May 2020

Bachelor of Technology in Software Engineering

Relevant coursework: Data Structures in Java, Database Management Systems, Computer Architecture

TECHNICAL SKILLS

Languages: Python, Java, C, C++, R, SQL

Technologies: PyTorch, TensorFlow, AWS EC2, S3, HPC, SLURM, CUDA, Singularity, Keras, Numpy, Pandas, Scikit-Learn, Git, Shell Scripting, Linux, SpaCy, Data Visualization, Tableau, XGBoost, NLP, Deep Learning

WORK EXPERIENCE

Assistant Research Scientist

July 2023 – Present

New York University

New York, USA

- Developing an R package for Generative Adversarial Networks and statistical analysis for estimating structural parameters to generate economic data. Leveraging sbatch scripting for efficient job scheduling, resource allocation, and task management. [\[blog\]](#)

Research Graduate Assistant(Open-Source Software Development)

Mar 2023 – May 2023

New York University, VIDA lab

New York, USA

- Developed and integrated a module into the alpha-automl library utilizing the scikit-learn pipeline API to enable Huggingface model support for feature extraction and model training. Provided memory optimization and unit tests. [\[code\]](#)

Applied Scientist Intern, Natural Language Processing

May 2022 – Aug 2022

Amazon

Seattle, USA

- Researched on domain adaptation and built a pipeline to train and fine-tune different model architectures and tokenizers for adapting LLMs to specific tasks/domains/datasets, using PyTorch and Huggingface transformers on AWS.

Research Assistant

June 2020 – June 2021

MIDAS lab, IIT-Delhi

New Delhi, India

Conversation summarization and translation, conversational AI (published)

[\[paper\]](#)

- Led a team of 8 students for data annotation, and released a large-scale dataset for code-switched Hindi-English conversations.
- Developed a Python framework with object-oriented design to compute and visually represent statistical code-mixed metrics for analyzing Hindi-English conversations. [\[code\]](#)
- Trained and fine-tuned multiple state-of-the-art language models (LLMs), including GPT-2, BERT, T5, BART, and PEGASUS. Focused on memory optimization of the training code for single GPU setting.
- Developed a comprehensive evaluation framework to assess the generated summaries from these LLMs, highlighting limitations of the LLMs such as factually and grammatically wrong, non innovative and non-diverse summary generation.

Probing the embeddings of large language models for domain robustness (published)

[\[paper\]](#)

- Used probes and domain divergence metrics to show the robustness of large language models(LLMs) such as BERT, RoBERTa, Distilled BERT, DAPT-RoBERTa to different domains such as biomedical data and tweets.
- Created a pipeline encompassing data cleaning, data preprocessing, and training classifier probes for each word embedding at each individual layer of LLMs.

Research and Development Group Lead

AI for Scientific Research, New York University(part-time)

Jan 2023 – Present

New York, USA

- Leading the AIfSR group at NYU, by establishing collaborations with professionals in natural sciences to help with AI/ML, interviewing students, training and supervising students in product/paper delivery in a cross-disciplinary environment.
- Created a tutorial for students for using LLMs from Huggingface on NYU HPC cluster for feature extraction. [[tutorial code](#)]

PUBLICATIONS

“GupShup: An Annotated Corpus for Abstractive Summarization of Open-Domain Code-Switched Conversations.”

EMNLP 2021, Dominican Republic.

Laiba Mehnaz, Debanjan Mahata, Rakesh Gosangi, Uma Sushmitha Gunturi, Riya Jain, Gauri Gupta, Amardeep Kumar, Isabelle Lee, Anish Acharya, Rajiv Ratn Shah. [[paper](#)] [[code](#)]

“Analyzing the Domain Robustness of Pretrained Language Models, Layer by Layer.”

AdaptNLP at EACL 2021.

Abhinav Ramesh Kashyap, Laiba Mehnaz, Bhavitvya Malik, Abdul Waheed, Devamanyu Hazarika, Min-Yen Kan, Rajiv Ratn Shah. [[paper](#)]

“Automatic classification of tweets mentioning a medication using pre-trained sentence encoders.”

SMM4H at COLING 2020, Italy, Spain.

Laiba Mehnaz. [[paper](#)] [[poster](#)]

“Using Transfer Learning for detecting drug mentions in tweets.”

ICT4SD 2020, Goa, India.

Laiba Mehnaz and Rajni Jindal. [[paper](#)]

“MIDAS@SMM4H-2019: Identifying Adverse Drug Reactions and Personal Health Experience Mentions from Twitter.”

SMM4H at ACL 2019, Italy.

Sarthak Anand, Debanjan Mahata, Haimin Zhang, Simra Shahid, Laiba Mehnaz, Yaman Kumar, Rajiv Ratn Shah. [[paper](#)] [[poster](#)] [[code](#)]

“MIDAS at SemEval 2019 Task 6: Identifying Offensive Posts and Targeted Offense from Twitter.”

SemEval at NAACL HLT 2019, Minneapolis, USA.

Haimin Zhang, Debanjan Mahata, Simra Shahid, Laiba Mehnaz, Sarthak Anand, Yaman Kumar, Rajiv Ratn Shah, Karan Uppal. [[paper](#)]

“MIDAS at SemEval-2019 Task 9: Suggestion Mining from Online Reviews using ULMFiT.”

SemEval at NAACL HLT 2019, Minneapolis, USA.

Sarthak Anand, Debanjan Mahata, Kartik Aggarwal, Laiba Mehnaz, Simra Shahid, Haimin Zhang, Yaman Kumar, Rajiv Ratn Shah, Karan Uppal. [[paper](#)]

“Identification of Emergency Blood Donation Request on Twitter.”

SMM4H at EMNLP 2018, Brussels, Belgium.

Puneet Mathur, Meghna Ayyar, Sahil Chopra, Simra Shahid, Laiba Mehnaz, Rajiv Ratn Shah. [[paper](#)]