

# Debrup Das

📍 Amherst, MA    ✉️ [debrupdas@umass.edu](mailto:debrupdas@umass.edu)    in [DebrupDas](#)    🔄 [Debrup-61](#)

**Website:** <https://debrup-61.github.io/>

## Education

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- Ph.D.** *Computer Science, University of Massachusetts, Amherst, MA, USA*      Sept 2024 – Ongoing
- **Advisor:** [Prof. Negin Rahimi](#)
  - **Member of CIIR Lab** ([Center of Intelligent Information Retrieval](#))
- M.Sc.** *Mathematics and Computing, Indian Institute of Technology Kharagpur, India*      Aug 2019 - Apr 2024  
[Integrated Master of Science 5 yr]
- **Thesis Advisor:** [Prof. Somak Aditya](#)
  - **CGPA:** 9.00/10

## Research Interests

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*RAG for mathematical reasoning, Information Retrieval, Multi-agent and tool-based LLMs , Safety in LLMs*

## Experience

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- University of Massachusetts, Amherst, CIIR**      Research Assistant  
Sep 2024 – Current
- Research on *retrieval augmented generation* for complex multi-step math reasoning in LLMs.
  - Mentored by [Prof Negin Rahimi](#).
- Rakuten India**, Language and Speech Processing Team      Research Intern  
May 2023 – Dec 2023
- Research on *tool-augmented LLMs* for complex math reasoning.
  - Integrating LLMs with symbolic tools such as *Python*, *Wolfram Alpha* and web search with *Bing API*.
  - Accepted as a Main Conference Paper at **NAACL 2024**, Mexico City.
- Indian Institute of Technology, Kharagpur** (in collaboration with **MBZUAI**),      Research Intern  
Dec 2023 – May 2024
- Research on *sensitivity* of LLMs to different segments of the input, in classification tasks such as hate speech, sentiment analysis, etc.
  - *Adversarial example generation*, *attacks* using the notion of sensitivity.
  - Mentored by [Prof Monojit Choudhury](#) and [Prof Somak Aditya](#) and funded by [Microsoft AFMR](#) (CURRENTLY IN SUBMISSION)

## McGill University, Montreal, Genome Quebec Innovation Center

- Research on genome-wide association studies (GWAS) to detect rare disease causing variants.
- Mentored by [Prof Simon Gravel](#) and funded by the [MITACS Globalink Research Scholarship](#).

Research Intern  
May 2022 – Dec 2022

## Indian Institute of Technology, Kharagpur

- Research on deep learning methods, using tree-based models with nature-inspired optimization using genetic algorithms.
- Mentored by [Prof Nirupam Chakraborti](#), [Czech Technical University](#).

Research Intern  
May 2021 – Dec 2021

## Publications

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### MATHSENSEI: A Tool-Augmented Large Language Model for Mathematical Reasoning

June 2024

**Debrup Das**, Debopriyo Banerjee, Somak Aditya, Ashish Kulkarni

NAACL 2024, Main Conference, MATHSENSEI featured on [Rakuten News](#)

## Responsibilities

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- Teaching Assistant, UMass Amherst, Fall 2024, **Search Engines** (CS 446) by [Prof James Allan](#)
- Served as reviewer for NAACL 2024.
- Former member of NATIONAL SOCIAL SERVICE SCHEME, India (NSS India)

## English Proficiency

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**TOEFL:** TOTAL: 112/120, SPEAKING: 30/30, READING: 29/30, LISTENING: 27/30, WRITING: 26/30

## Relevant Coursework/Certifications

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**Coursework:** Natural Language Processing, Information Retrieval, Neural Networks, Machine Learning, Graphical and Generative AI models, Probability and Statistics, Stochastic Processes.

**Certifications:** Machine Learning Stanford University by Andrew Ng, Deep Learning by deeplearning.ai, Python for Everybody by UMichigan

## Technologies

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**Languages:** Python, Bash, Matlab, R, SQL, C++/C

**Libraries:** Pytorch, Sympy, Numpy, Scikit-Learn, Scipy

**Tools:** Wolfram Alpha Programming, Git, Latex