

# DEBAJYOTI MAZUMDER

PHD SCHOLAR · NLP

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## Summary

Debayyoti Mazumder is a Ph.D. research scholar in the Data Science and Engineering (DSE) Department at IISER Bhopal. He is working under the guidance of Dr. Jasabanta Patro, and his research interest lies mainly in Social Natural Language Processing (NLP).

## Research Projects

### Can native language samples improve code-mixed hate detection?: A case study for Hindi-English code-mixed hate detection

D. Mazumder, A. Kumar, J. Patro

CODE-MIXED HATE DETECTION ( [HTTPS://DL.ACM.ORG/DOI/10.1145/3726866](https://dl.acm.org/doi/10.1145/3726866))

ACM TALLIP - 2025

- Adding native hate samples in the code-mixed training set, even in small quantity, improved the performance of MLMs for code-mixed hate detection.

### Revealing the impact of synthetic native samples and multi-tasking strategies in Hindi-English code-mixed humour and sarcasm detection

D. Mazumder, A. Kumar, J. Patro

MULTI-TASK LEARNING FRAMEWORK FOR HUMOR & SARCASM DETECTION (PRE-PRINT : [HTTPS://ARXIV.ORG/ABS/2412.12761](https://arxiv.org/abs/2412.12761))

EMNLP Findings-2025

- Creating a multi-task learning architecture that leverages shared knowledge among different tasks.
- Compared the multi-task learning framework with the current state-of-the-art models.

### Improving the fact-checking performance of language models by relying on their entailment ability

G. Kumar, D. Mazumder, A. Garg, J. Patro

FACT CHECKING (PRE-PRINT : [HTTPS://ARXIV.ORG/PDF/2505.15050](https://arxiv.org/pdf/2505.15050))

Submitted, Under Review

- Leveraging entailment ability of language model.
- Thorough comparison between training and prompting based methods.

### On VLMs for Diverse Tasks in Multimodal Meme Classification

D. Gavit, D. Mazumder, S. Das, J. Patro

MULTIMODAL MEME CLASSIFICATION (PRE-PRINT : [HTTPS://ARXIV.ORG/ABS/2505.20937](https://arxiv.org/abs/2505.20937))

Ongoing

- A comprehensive study of state-of-the-art vision-language models (VLMs).

### Evaluation of Cross-Layer Transformer Networks for Link Prediction in Multiplex Networks

D. Sharma, D. Mazumder, J. Patro

LINK PREDICTION IN MULTIPLEX NETWORKS

Ongoing

- Novel task : Link prediction task in partial graph of multiplex networks.

## Work Experience

### NielsenIQ

RESEARCH SCIENTIST - SR. INTERN

July. 2025 - present

- LLM Reasoning using Reinforcement Learning, specifically GRPO

## Recent Certifications & Achievements

2025 **Selected for LiveRAG Challenge track**, SIGIR 2025

Padua, Italy

2023 **Travel Grant (Participant)**, Indian Symposium on Machine Learning (IndoML – 2023)

IITB, INDIA

2023 **2nd Position**, Poster Presentation on DSE(Data Science & Engineering) day

IISERB, INDIA

2022 **Travel Grant (Participant)**, Indian Symposium on Machine Learning (IndoML – 2022)

IITGN, INDIA

2022 **MHRD Fellowship Recipient**, GATE Exam

INDIA

## Education

### Indian Institute of Science Education and Research - Bhopal (IISERB)

Madhya Pradesh, India

PH.D. IN DATA SCIENCE & ENGINEERING

Aug. 2022 - present

Score: 9.00 CPI

Supervisor : Dr. Jasabanta Patro

## **Zakir Hussain Delhi College, University of Delhi**

MSC IN MATHEMATICS

Score: 69.25 %

*New Delhi, India*

*Jul. 2018 - Oct. 2020*

## **Deshbandhu College, University of Delhi**

BSC HONOURS IN MATHEMATICS

Score: 8.70 SGPA

*New Delhi, India*

*Jul. 2015 - Jul. 2018*

## **K.V. No.-2, Delhi Cantt.-10 (CBSE Board)**

SENIOR SECONDARY

Score: 89.80 %

*New Delhi, India*

*2015*

## **K.V. No.-3, AFS-II, Jamnagar (CBSE Board)**

SECONDARY

Score: 9.60 CGPA

*Gujarat, India*

*2013*

## **Courses**

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IISER BHOPAL

- Machine Learning- DSE617, Deep Learning- DSE616, Natural Language Processing- DSE607, Advance Natural Language Processing- DSE 618, Spatial Data Science & Applications- DSE606, Data Science in Practice- DSE615
- Teaching Assistant : Introduction to Programming- ECS102 (Jan,2025 -), Natural Language Processing- DSE407/607 (Aug,2024 - Nov,2024), Introduction to Programming- ECS102 (Jan,2024 - Apr,2024), Natural Language Processing- DSE407/607 (Aug,2023 - Nov,2023), Applied optimization- DSE311 (Jan,2023 - Apr,2023)