

# TAMANNA HOSSAIN

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PhD Candidate researching LLM safety, evaluation, reasoning robustness

## HIGHLIGHTS

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- **360+ citations.** Published papers on AI safety, evaluation, and benchmarking, in top-tier NLP conferences (**3 first author**) and workshops, including **a best paper award**.
- Ongoing research on using **symbolic representations** to guide LLM decoding, **improving reasoning** and enhancing interpretability and robustness.
- **Industry data science** experience delivering production lead-scoring models and contact-center and sales monitoring systems.
- Extensive **community organizing** experience spanning reading groups, mixers, advocacy and charity events, and student organizations.

## EDUCATION

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### University of California, Irvine

*Ph.D. in Computer Science*

2021 – Present

Advisor: Sameer Singh

*M.S. in Computer Science*

2019 – 2021

### Oklahoma State University

*M.S. in Statistics*

2013 – 2015

### Lawrence University

*B.A. in Mathematics, Philosophy*

2008 – 2012

## WORK EXPERIENCE

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### Dataminr

*Research Intern*

Jul–Sep 2024

- Characterized information loss in State Space Model (SSMs), an efficient alternative to transformers.

### Computer Science, University of California, Irvine

*Graduate Student Researcher*

2020–Present

- Developed an award-winning benchmark for COVID misinformation detection during the pandemic, and designed community-informed evaluations for queer inclusion in large language modeling.
- Ongoing research into incorporating neurosymbolic methods to improve LLM reasoning.

*Teaching Assistant*

Jan–Jun 2024

- Leading discussion sections, grading, and making exams for an upper-division machine learning classes (300+ students).

## LoanDepot

*Data Scientist*

2016–2019

- Built lead scoring models used in production to identify the most promising leads and route to appropriate Sales agents.
- Designed and maintained data monitors across the Contact Center and Sales teams using Tableau,

## Statistics, Oklahoma State University

*Instructor*

2014-2015

- Instructor for Elementary Statistics for three semesters. Spring and Fall average instructor ratings of 4.59/5 and 4.49/5 respectively.
- Supervised three Honors research projects.

*Teaching Assistant*

2013-2014

- Tutor for all introductory statistics courses, and grader for Engineering Statistics, and Statistics for Experimenters I.

## PAPERS

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### Characterizing Mamba’s Selective Memory Using Auto-Encoders

**Tamanna Hossain**, Robert L. Logan, Ganesh Jagadeesan, Sameer Singh, Joel Tetreault, Alejandro Jaimes  
*Proceedings of AACL 2025*

### MisgenderMender: A Community-Informed Approach to Interventions for Misgendering

**Tamanna Hossain**, Sunipa Dev, Sameer Singh  
*Proceedings of NAACL 2024*

### MISGENDERED: Limits of Large Language Models in Understanding Pronouns

**Tamanna Hossain**, Sunipa Dev, Sameer Singh  
*Proceedings of ACL 2023*

### Evaluating the Generalisability of Neural Rumour Verification Models

Elena Kochkina, **Tamanna Hossain**, Robert L. Logan IV, Miguel Arana-Catania, Rob Procter, Arkaitz Zubiaga, Sameer Singh, Yulan He, Maria Liakata

*Information Processing & Management 60(1), 2023*

### [Best Paper Award] Detecting COVID-19 Misinformation on Social Media

**Tamanna Hossain**, Robert L. Logan IV, Arjuna Ugarte, Yoshitomo Matsubara, Sean Young, Sameer Singh  
*Proceedings of the EMNLP 2020 COVID-19 Workshop*

## SELECTED HONORS & AWARDS

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### Hasso-Plattner Institut Fellowship

*Hasso-Plattner Institut*

2023–Present

### Bob & Barbara Kleist Endowed Graduate Fellowship

*ICS, University of California, Irvine*

2024

### Best Paper Award

EMNLP 2020 COVID-19 Workshop (Part 2)

2020

## Most Innovative Use of Data

Jornaya

2016

## TALKS

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- **AACL 2025**, *Characterizing Mamba's Selective Memory Using Auto-Encoders*,
- **Queer in AI, NAACL 2024**, *MisgenderMender: A Community-Informed Approach to Interventions for Misgendering*,
- **LLM Panel**, *Hasso-Plattner Institut AI & Data Retreat*, 2023

## WORKSHOPS & POSTERS

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- **Blackbox NLP, EMNLP 2025**, *Characterizing Mamba's Selective Memory Using Auto-Encoders*,
- **HPI@UCI Workshop 2025**, *Characterizing Mamba's Selective Memory Using Auto-Encoders*,
- **Workshop on Online Abuse and Harms, NAACL 2024**, *MisgenderMender: A Community-Informed Approach to Interventions for Misgendering*,
- **TrustNLP Workshop, NAACL 2024**, *MisgenderMender: A Community-Informed Approach to Interventions for Misgendering*,
- **NLP+HCI Workshop, NAACL 2024**, *MisgenderMender: A Community-Informed Approach to Interventions for Misgendering*,
- **SoCal NLP Symposium 2023**, *MISGENDERED: Limits of Large Language Models in Understanding*,
- **COVID-19 Workshop, EMNLP 2020**, *Detecting COVID-19 Misinformation on Social Media*,

## SERVICE EXPERIENCE

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- **Co-organizer**, *HPI-UCI Reading Group*, 2023 – 2024
- **Organizer**, *UCI ML Hackathon*, 2021 & 2022
- **Coordinating Board Member**, *One Billion Rising, Bangladesh*, 2012 – 2013
- **President**, *V-Day, Lawrence University*, 2011 – 2012
- **General Secretary**, *Student Government, Lawrence University*, 2010 – 2011

## AFFILIATIONS

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Kappa Alpha Theta

## SKILLS

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- **ML & Programming:** Python, PyTorch, Transformers, Scikit-learn
- **Data Analysis & Tools:** SQL, Pandas, NumPy, Matplotlib/Seaborn, Git