Sree Bhattacharyya

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Education

Ph.D. in Informatics Aug 2023 – present | State College, PA
Pennsylvania State University
Advisor: Dr. James Z. Wang
Research Areas: Human Behavior Modeling, Computational Psychology, Human-centered AI, Human-inspired AI Safety

Bachelor of Technology in Computer Science and Technology 2018 – 2022 | Howrah, India
Indian Institute of Engineering Science and Technology, Shibpur, India
CGPA: 9.86/10, Department Rank: 2/72, University Rank: 3/600

Research Interests

My research interests are broadly at the intersection of human-centered and human-inspired AI. I aim to build evaluations and training methods that help AI systems capture subjective human behavior, particularly affective and social cognition. I am interested in helping artificial systems also model how subjective cognition in humans influences downstream decision-making. I also draw inspiration from human psychology and cognition to improve safety and reliability of AI systems.

Publications (*equal contribution)

[1] Generative Theory-of-Mind in Naturalistic Persuasion Debates
Kerem Oktar*, **Sree Bhattacharyya***, Guy Davidson*, ..., Gargi Ghosh
Working paper

[2] Perspective Blindness in Foundation Models when Inferring Latent Mental States
Sree Bhattacharyya, Nina Mehrabi, Margaret Morris, Ryan Wang, ..., Michael Proulx
Working paper

[3] A shared data infrastructure for AI understanding of bodily expressed emotion
Sitao Zhang*, **Sree Bhattacharyya***, Jia Li, Amy LaViers, ..., James Z. Wang
Working paper

[4] Beyond Confidence: Rethinking Self-Assessments for Performance Prediction in LLMs
Sree Bhattacharyya, Samarth Khanna, Leona Chen, Lucas Craig, Tharun Dilliraj, James Z. Wang
In Proceedings of The Fortieth Annual Conference on Neural Information Processing Systems **(NeurIPS 2026)** (Main Track)
Presented at Workshop on Agent Behavior at the Third Conference on Language Modeling **(COLM 2026)**

[5] Expressing Social Emotions: Misalignment Between LLMs and Human Cultural Emotion Norms
Sree Bhattacharyya, Manas Mehta, Leona Chen, Cristina Salvador, Agata Lapedriza, Shiran Dudy, James Z. Wang
Under Review

[6] Too Categorical to be Human: Emotion Concepts in LLMs and Humans
Sree Bhattacharyya, Evgenii Kuriabov, Lucas Craig, Tharun Dilliraj, Jia Li, James Z. Wang
Under Review
Presented at 20th Women in Machine Learning Workshop **(WiML 2025)** at The Thirty-Ninth Annual Conference on Neural Information Processing Systems **(NeurIPS 2025)**

[7] Unsupervised Memorability Modeling from Tip-of-the-Tongue Retrieval Queries
Sree Bhattacharyya, Yaman K. Singla, Sudhir Yarram, Somesh Singh, Harini SI, James Z. Wang
In Proceedings of The IEEE/CVF Winter Conference on Applications of Computer Vision **(WACV 2026)**

[8] Evaluating Vision-Language Models for Emotion Recognition
Sree Bhattacharyya, James Z. Wang

In Findings of The 2025 Annual Conference of The Nations of the Americas Chapter of the Association for Computational Linguistics **(NAACL 2025 Findings**)

[9] A Heterogeneous Multimodal Graph Learning Framework for Emotion Recognition in Social Networks
Sree Bhattacharyya, Shuhua Yang, James Z. Wang
In Proceedings of the 12th International Conference on Affective Computing and Intelligent Interaction **(ACII 2024)**.
Oral Presentation

[10] Link Prediction for Social Networks using Representation Learning and Heuristic-based Features
Samarth Khanna*, **Sree Bhattacharyya***, Sudipto Ghosh, Kushagra Agarwal, Asit Kumar Das
Presented at the 9th International Workshop on Mining Actionable Insights from Social Networks (**MAISoN**) at the 32nd International Joint Conference on Artificial Intelligence **(IJCAI 2023)**.

[11] Towards Bengali WordNet Enrichment using Knowledge Graph Completion Techniques
Sree Bhattacharyya, Abhik Jana
In Proceedings of the Workshop on Resources and Technologies for Indigenous, Endangered and Lesser-resourced Languages in Eurasia (**EURALI**) within the 13th Language Resources and Evaluation Conference **(LREC 2022).**

Research Experience

Research Scientist Intern May 2026 – Present | Redmond, US
Meta (*Reality Labs Research* (*RLR*), *FAIR*)
- Research focus: emotional and social intelligence, subjective theory-of-mind
- Building evaluation datasets and frameworks for measuring understanding of perspective-specific differences in internal states (emotional or cognitive states) [2]. Key collaborators: Michael Proulx, Nina Mehrabi, Margaret Morris
- Building an open-ended theory-of-mind generation benchmark for predicting internal states and downstream behavior in persuasion settings [1]. Key collaborators: Kerem Oktar

Graduate Assistant Aug 2023 – May 2026 | State College, US
The Pennsylvania State University
- Research focus: modeling subjective, nuanced human behavior, computational psychology, human-inspired methods for AI safety
- Building a **large-scale data infrastructure** (dataset + evaluation framework) for **bodily expressed emotions** [3]**.** Key collaborators: Amy LaViers, Rachelle Tsachor, Reginald Adams, Michelle Newman
- **Evaluating and building AI systems** for **capturing subjectivity** in human emotions, including: contextual subjectivity [6], cultural variation [5], individual differences [9]. Key collaborators: Reginald Adams, Jia Li, Shiran Dudy, Agata Lapedriza
- Using appraisals and other **human-inspired psychological** theories to **improve LLM reliability** [4].

Research Intern Jan 2025 – Sep 2025 | Remote
Adobe
- Research focus: behavior modeling, visual memorability
- Curated **large-scale memorability data** from online platforms like Reddit, including descriptive recall signals. Proposed a novel task of recall generation, with a fine-tuned model, and the **first model for multimodal Tip-of-the-tongue retrieval** [7]. Key collaborators: Yaman K. Singla

Undergraduate Researcher Oct 2021 – May 2022 | Howrah, India
IIEST, Shibpur
- Research focus: graph neural networks
- Conducted an empirical analyses of link prediction methods, including comparing hand-crafted features with black-box learned features [10]. Key collaborator: Asit Kumar Das

DAAD-WISE Undergraduate Research Fellow May 2021 – Oct 2021 | Hamburg, Germany
University of Hamburg
- Research focus: multilingual NLP
- Developed a graph-based method for automatically enriching lexical resources (e.g., WordNet) for a low-resource Indian language [11]. Key collaborators: Abhik Jana, Chris Biemann

Selected Awards

- **Fox Graduate School (Penn State)** Degree Completion Award: merit-based university-wide award ($10,000). 1 out of 36 chosen scholars in the 2026-27 cohort of graduate students, across all disciplines.
- **Vice Provost and Dean of the Graduate School Student Persistence Scholarship (Summer 2025):** Awarded $4500 by the Penn State Graduate School for research.
- **Penn State College of IST Rising Star Award** runner-up for research excellence (Spring 2025).
- **Jordan-Rednor Graduate Fellowship** (Fall 2023)**:** merit-based fellowship of $6000 from College of IST, Penn State.
- **Travel Award** from Women in Machine Learning for a fully-funded trip to NeurIPS 2025.
- **NAACL DEI and Volunteer Award** (Spring 2025)**.**
- Selected to attend the **Grace Hopper Celebration 2025** in person, sponsored by **College of IST, PSU** (Fall 2025).
- **DAAD Working Internships in Science and Engineering (WISE) Fellowship** for research at a public German university (Summer 2021).
- **Indian Academy of Sciences (IAS)** Summer Research Fellowship for research at Indian Statistical Institute, Kolkata (Summer 2021).
- 4-year long science Scholarship from **Jagadish Bose National Science Talent Search (JBNSTS) Organization** (2018-22 batch) for undergraduate studies.

Software Development Experience

Software Engineer Jul 2022 – Aug 2023 | Bangalore, India
Microsoft
Worked on building and maintaining the Hadoop driver for Azure Storage, contributing regularly to the large-scale open-source Apache Hadoop repository.

Sofware Engineer Intern Jun 2021 – Jul 2021 | Hyderabad, India
Microsoft
Worked with the Digital Security and Risk Engineering division, on creating new features for the Azure DevOps security scanner, including introducing an optimization that reduced time to scan large-scale repositories by 99%.

Student Contributor Sep 2020 – Mar 2021 | Remote
CERN
Worked as part of the CMS GEM Collaboration at CERN, contributing to designing and building a database for storing historical configurations of experiments.

Academic Services

Reviewing: ACL Rolling Reviews (Dec 2023 - Dec 2024); IEEE Transactions on Affective Computing (2025); NeurIPS (2025, 2026); AAAI (2026, 2027); WACV 2026, International Journal of Computer Vision (2026)
Volunteering: NAACL 2025, AmericasNLP Workshop 2025, Arts and Robotics Program (ICRA 2025)
Workshop Organization: Bodily Expressed Emotion Understanding Workshop @ AAAI 2026

Extra-Curricular Activities

- **Peer Mentor** for incoming PhD students at College of IST, Penn State (Summer 2025)
- Lead Student Organizer of **AI for Social Impact Seminar Series** at Penn State (Feb 2025 - May 2026)
- Project Mentor for underrepresented CS undergrad students at **AI4All** (Fall 2024)
- Section Leader at the **Stanford University Code In Place** Program (2024)
- Professional Theatre and classical music performer in India