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: Affective Computing, Multimodal AI

Publications

[1] Examining Cultural Influences on Emotional Expression using LLMs
Working Paper

[2] Exploring The Cognitive Factor for Emotional Reasoning with LLMs
Working Paper

[3] ABEE: A Large-scale Bodily Expressed Emotions Dataset and Community Infrastructure
Working Paper

[4] Web-Scale Learning for Content Memorability and Tip-of-the-Tongue Retrieval
Under Review at The IEEE/CVF Winter Conference on Applications of Computer Vision (**WACV**) 2026

[5] Evaluating Vision-Language Models for Emotion Recognition
Sree Bhattacharyya, James Z. Wang
Findings of The 2025 Annual Conference of The Nations of the Americas Chapter of the Association for Computational Linguistics (**NAACL 2025 Findings**)

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

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

[8] Towards Bengali WordNet Enrichment using Knowledge Graph Completion Techniques
Sree Bhattacharyya, Abhik Jana
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
Poster , Talk

Selected Research Projects

Community Data Infrastructure for Bodily Expressed Emotions (NSF CCRI): Aug 2023 – present

- Collaborators: *Dr. Amy LaViers* (*RAD LAB*), *Dr. Rachelle Tsachor* (*UIC*), *Dr. Reginald Adams* , *Dr. Michelle Newman* (*PSU*)
- Collecting a large-scale video dataset (~300k samples) for bodily expressed emotions. [3]
- Building an infrastructure to host similar datasets, and support functions like content-based retrieval of videos.
- Planning and conducting a robotics feasibility study, exploring how social robots can learn nonverbal emotional cues.

Technologies: *Amazon MTurk, SQL, PHP, PyTorch, Multimodal Retrieval*

Content Memorability with Web-Scale Data [4] Jan 2025 – present

- Collaborator: *Dr. Yaman K. Singla* (*Adobe Research*).
- Curating memorability data from online platforms like Reddit, through large-scale processing.

- Fine-tuning large vision-language models to create models for prediction of recall signals, tip-of-the-tongue retrieval, and memorable content generation.

Technologies: *PyTorch, Huggingface Transformers, Large Vision-Language Models, Low-Rank Adaptation, Fine-Tuning, Instruction-Tuning, Data Processing, vLLM*

Studying Cultural Representations of Emotions in LLMs [1] Jan 2025 – present

- Collaborators: *Dr. Shiran Dudy* , *Dr. Agata Lapedriza* (*Northeastern University*)
- Replicating a human study on cultural differences (independence vs. interdependence) in emotional expressions, with LLMs.
- Studying additional differences along demographic axes like age and gender, and how well LLMs capture them.

Technologies: *LLMs, Prompting, Statistical Analysis*

Generating Cognitive Appraisals using LLMs [2] Apr 2025 – present

- Creating a new task and benchmark to evaluate whether LLMs can generate cognitive appraisals of situations.
- Large-scale study with several variations (different personas assigned to LLMs, ability of LLMs to form world models).
- Developing new metrics and axes of evaluation for the task.

Technologies: *LLMs, PyTorch, Huggingface Transformers, vLLM, Prompting, Statistical Analysis*

Emotion Recognition Using Vision-Language Models [5] May 2024 – Oct 2024

- Evaluating Vision-Language Models for Evoked Emotion Recognition on the image modality.
- Detailed analysis of robustness of models, and error cases.

Technologies: *LLMs, PyTorch, Huggingface Transformers, vLLM, Prompting, Statistical Analysis*

Predicting Personalized Emotions in Social Networks [6] Oct 2023 – Mar 2024

Created a multimodal graph-based framework that uses both media and user information to predict emotions in social networks. Established new SOTA performance on the task.

Experience

Graduate Assistant Aug 2023 – present | State College, US

The Pennsylvania State University
Research Assistant with the Wang Group .
Teaching Assistant for Applied Data Science (Fall 2024).

Software Engineer Jul 2022 – Aug 2023 | Bangalore, India

Microsoft (*Azure Storage*)

DAAD-WISE Research Fellow May 2021 – Oct 2021 | Hamburg, Germany

University of Hamburg

Software Engineer Intern Jun 2021 – Jul 2021 | Remote

Microsoft (*Digital Security and Risk Engineering*)

Selected Awards

- **Vice Provost and Dean of the Graduate School Student Persistence Scholarship (Summer 2025):** Awarded $4500 by the Penn State Graduate School for research.
- **NAACL DEI and Volunteer Award (2025).**
- **Penn State College of IST Rising Star Award** runner-up (for research excellence).
- **Jordan-Rednor Graduate Fellowship (Fall 2023):** merit-based fellowship of $6000 from College of IST, Penn State.

Academic Services

Reviewing: ACL Rolling Reviews: Dec 2023 - Dec 2024; IEEE Transactions on Affective Computing (2025).
Volunteering: NAACL 2025, AmericasNLP Workshop 2025.
Talks: "Emotions in the Age of AI" at Adobe MDSR Labs, India, May 2025.