Sounak Mondal

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Research Interests

I am interested in research on **multimodal learning**, particularly **vision-language modeling**. My PhD thesis focuses on using **vision-language representation learning** and **multimodal foundation models (*e.g.,* multimodal LLMs)** for modeling human visual attention (eye gaze).

Education

Stony Brook University, Stony Brook, NY **August, 2020 – Present**
Doctor of Philosophy, Computer Science *GPA: 4.0/4.0*
Advised by *Minh Hoai Nguyen*, *Dimitris Samaras*, *Gregory Zelinsky*

Jadavpur University, Kolkata, India **August, 2013 – May, 2017**
Bachelor of Engineering, Computer Science & Engineering *GPA(Absolute Grading): 8.65/10.00, Rank: 3/54*

Selected Publications

1. **Generative Gaze Decoding via Multimodal LLMs**
Sounak Mondal, D. Samaras, G. Zelinsky, M. Hoai ***NeurIPS** 2025 (under submission)*
2. **Gaze-Language Alignment for Zero-Shot Prediction of Visual Search Targets from Human Gaze Scanpaths**
Sounak Mondal, N. Sendhilnathan, T. Zhang, Y. Liu, M. Proulx, M.L. Iuzzolino, C. Qin, T.R. Jonker ***ICCV** 2025*
3. **Few-shot Personalized Scanpath Prediction**
R. Xue, J. Xu, **Sounak Mondal**, H. Le, G. Zelinsky, M. Hoai, D. Samaras ***CVPR** 2025*
4. **Look Hear: Gaze Prediction for Speech-directed Human Attention**
Sounak Mondal, S. Ahn, Z. Yang, N. Balasubramanian, D. Samaras, G. Zelinsky, M. Hoai ***ECCV** 2024*
5. **Diffusion-Refined VQA Annotations for Semi-Supervised Gaze Following**
Q. Miao, A. Graikos, J. Zhang, **Sounak Mondal**, M. Hoai, D. Samaras ***ECCV** 2024*
6. **Unifying Top-down and Bottom-up Scanpath Prediction using Transformers**
Z. Yang, **Sounak Mondal**, S. Ahn, R. Xue, G. Zelinsky, M. Hoai, D. Samaras ***CVPR** 2024*
7. **Gazeformer: Scalable, Effective and Fast Prediction of Goal-Directed Human Attention**
Sounak Mondal, Z. Yang, S. Ahn, D. Samaras, G. Zelinsky, M. Hoai ***CVPR** 2023*
8. **Target-absent Human Attention**
Z. Yang, **Sounak Mondal**, S. Ahn, G. Zelinsky, M. Hoai, D. Samaras ***ECCV** 2022*
9. **Characterizing Target-absent Human Attention**
Y. Chen, Z. Yang, S. Chakraborty, **Sounak Mondal**, S. Ahn, D. Samaras, M. Hoai, G. Zelinsky ***CVPRW** 2022*

Experience

Research Scientist Intern | Meta Reality Labs Research, Burlingame, CA June, 2025 – Present
Self-Supervised Learning for Vision and Sensor Data via Multimodal LLMs

Research Scientist Intern | Meta Reality Labs Research, Redmond, WA June, 2024 – December, 2024
Vision-Language Modeling of Eye Gaze Behavior (paper accepted at ICCV'25); Part-Time Student Researcher from 10/2024

Research Intern | UII America, Cambridge, MA May, 2023 – August, 2023
Vision-Language (Multimodal) Modeling - Scene Graph Generation from captions using Large Language Models (LLMs)

Graduate Researcher | CV Lab, Stony Brook University, NY November, 2020 – Present
Vision-Language Modeling for gaze prediction (CVPR'23, ECCV'24), and gaze decoding (ICCV'25, NeurIPS'25 submission). Also worked on gaze prediction models for visual search (ECCV'22, CVPR'24, CVPR'25), and gaze estimation (ECCV'24).

NLP Engineer | Samsung Research Institute, Bangalore June, 2017 – August, 2020
Enhancements of Bixby digital assistant: (1) Low resource intent classification via transfer learning, (2) Sequence labeling for Named Entity Recognition and speech end-point detection, (3) Lightweight and fast text classification architecture (ICSC'20)

Summer Intern | Samsung Research Institute, Bangalore May, 2016 – July, 2016
Context awareness in SVoice platform for Natural Language Processing

Undergraduate Researcher | Indian Statistical Institute, Kolkata July, 2015 – June, 2017
Video Action Recognition/Detection (ICAPR'17, ICVGIP Workshop'16) advised by *Sanjoy Kumar Saha*, *Bhabatosh Chanda*

Academic & Technical Details

Graduate Courses: Computer Vision, Natural Language Processing, Robotics, Machine Learning, Database Systems
Languages & Frameworks: Python, C++, C, Java, PyTorch, TensorFlow, Hadoop (familiar), Spark (familiar)
Voluntary Service: Reviewer for CVPR, ICCV, NeuRIPS, TPAMI