

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 <i>Doctor of Philosophy, Computer Science</i> Advised by Minh Hoai Nguyen, Dimitris Samaras, Gregory Zelinsky	August, 2020 – December, 2025 (expected) <i>GPA: 4.0/4.0</i>
Jadavpur University, Kolkata, India <i>Bachelor of Engineering, Computer Science & Engineering</i>	August, 2013 – May, 2017 <i>GPA (Absolute Grading): 8.65/10.00, Rank: 3/54</i>

Selected Publications

1. **Generative Gaze Decoding via Multimodal LLMs**
Sounak Mondal, D. Samaras, G. Zelinsky, M. Hoai
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 Self-Supervised Learning for Vision and Sensor Data via Multimodal LLMs	June, 2025 – Present
Research Scientist Intern Meta Reality Labs Research, Redmond, WA Vision-Language Modeling of Eye Gaze Behavior (paper accepted at ICCV'25); Part-Time Student Researcher from 10/2024	June, 2024 – December, 2024
Research Intern UII America, Cambridge, MA Vision-Language (Multimodal) Modeling - Scene Graph Generation from captions using Large Language Models (LLMs)	May, 2023 – August, 2023
Graduate Researcher CV Lab, Stony Brook University, NY Vision-Language Modeling for gaze prediction (CVPR'23, ECCV'24), and gaze decoding (ICCV'25). Also worked on gaze prediction models for visual search (ECCV'22, CVPR'24, CVPR'25), and gaze estimation (ECCV'24).	November, 2020 – Present

NLP Engineer Samsung Research Institute, Bangalore 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)	June, 2017 – August, 2020
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Summer Intern Samsung Research Institute, Bangalore Context awareness in SVoice platform for Natural Language Processing	May, 2016 – July, 2016
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Undergraduate Researcher Indian Statistical Institute, Kolkata Video Action Recognition/Detection (ICAPR'17, ICVGIP Workshop'16) advised by Sanjoy Kumar Saha, Bhabatosh Chanda	July, 2015 – June, 2017
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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, ICLR, NeuRIPS, TPAMI