Sagnik Majumder

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Education

August 2025 **University of Texas at Austin (UT)-Austin**, Texas, United States
Doctor of Philosophy and Master of Science in Computer Science; **GPA: 3.96/4.0**

July 2018 **Birla Institute of Technology and Science (BITS)-Pilani**, Pilani, Rajasthan, India
Bachelor of Engineering (Hons.) in Electronics and Instrumentation
Thesis: "Neural Architecture Meta-learning via Reinforcement" | Advisor: Prof. V. Ramesh
GPA: 9.55/10, Distinction and ranked 2^{nd} out of 100 students

Internships and Research

Dec 2022 - present | **Visiting researcher at Meta AI**
Manager - Prof. Kristen Grauman

Jan 2020 - present | **Research assistant at UT Austin**
Advisor - Prof. Kristen Grauman

June 2022 - Dec 2022 | **Research scientist intern at Reality Labs Research, Meta**
Manager - Dr. Vamsi Krishna Ithapu

Jan 2018 - May 2019 | **Research assistant at Goethe University**
Advisor - Prof. Visvanathan Ramesh

May 2017 - *May* 2019 | **Research intern at Frankfurt Institute for Advanced Studies**
Advisor - Prof. Christoph Malsburg

Peer-reviewed Publications and Submissions

- **Sagnik Majumder**, Ziad Al-Halah, Kristen Grauman. *"Learning Spatial Features from Audio-Visual Correspondence in Egocentric Videos"*. **Under review**. [arXiv], [Project Page].
- **Sagnik Majumder**, Hao Jiang, Pierre Moulon, Ethan Henderson, Paul Calamia, Kristen Grauman*, Vamsi Krishna Ithapu*. *"Chat2Map: Efficient Scene Mapping from Multi-Ego Conversations"*. **CVPR 2023**. [arXiv], [Project Page].
- **Sagnik Majumder**, Changan Chen*, Ziad Al-Halah*, Kristen Grauman. *"Few-Shot Audio-Visual Learning of Environment Acoustics"*. **NeurIPS 2022**. [arXiv], [Project Page].
- **Sagnik Majumder**, Kristen Grauman. *"Active Audio-Visual Separation of Dynamic Sound Sources"*. **ECCV 2022**. [arXiv], [Project Page].
- **Sagnik Majumder**, Ziad Al-Halah, Kristen Grauman. *"Move2Hear: Active Audio-Visual Source Separation"*. **ICCV 2021**. [arXiv], [Project Page].
- Changan Chen, **Sagnik Majumder**, Ziad Al-Halah, Ruohan Gao, Santhosh K. Ramakrishnan, Kristen Grauman. *"Learning to Set Waypoints for Audio-Visual Navigation"*. **ICLR 2021**. [Publication], [Project Page].
- **Sagnik Majumder**, Chinmoy Samant, Greg Durrett. *"Model Agnostic Answer Reranking System for Adversarial Question Answering"*. **EACL 2021** Student Research Workshop. [Publication].

- Martin Mundt, Iuliia Pliushch, **Sagnik Majumder**, Yong Won Hong, Visvanathan Ramesh. *"Unified Probabilistic Deep Continual Learning through Generative Replay and Open Set Recognition"*. **Journal of Imaging 2022**. [Preprint], [Codebase].
- Martin Mundt, **Sagnik Majumder**, Sreenivas Narasimha Murali, Panagiotis Panetsos, Visvanathan Ramesh. *"Meta-learning Convolutional Neural Architectures for Multi-target Concrete Defect Classification with the COncrete DEfect BRidge IMage Dataset"*. **CVPR 2019**. [Publication], [Codebase].
- Martin Mundt, **Sagnik Majumder**, Tobias Weis, Visvanathan Ramesh. *"Rethinking Layer-wise Feature Amounts in Convolutional Neural Network Architectures"*. **NeurIPS 2018 CRACT Workshop.** [Publication], [Codebase].
- **Sagnik Majumder**, C. von der Malsburg, Aashish Richhariya, Surekha Bhanot, *"Handwritten Digit Recognition by Elastic Matching"*. **Journal of Computers 2018**. [Publication], [Codebase].

Invited Talks

Sight and Sound at CVPR 2023:	*Chat2Map: Efficient Scene Mapping from Multi-Ego Conversations*
NSA Lab at JHU:	*Efficiently understanding 3D scenes using sight and sound*
ECCV AV4D workshop 2022:	*Active Audio-Visual Separation of Dynammic Sound Sources*
Sight and Sound at CVPR 2022:	*Active Audio-Visual Separation of Dynammic Sound Sources*
Embodied AI seminar at Meta AI:	*Active Audio-Visual Separation of Dynammic Sound Sources*

Professional Service

Workshop co-organizer:	CVPR Embodied AI workshop 2022-23
Reviewer:	CVPR; NeurIPS; ECCV; ICCV; RA-L; ICRA; BMVC; TNNLS

Academic Honors and Achievements

July 2023	Received the Professional Development Award from UT Austin for presenting my research at CVPR
November 2020	TOEFL iBT: 118 (Reading: 29, Listening: 30 Speaking: 29, Writing: 30)
July 2018	GRE: 334 (Quantitative: 170, Verbal: 164, AWA: 5.0)
Jan 2016 - Jun 2018	Received merit scholarship for academic excellence from BITS Pilani for 5 consecutive semesters
March 2017	Secured 2^{nd} place in paper presentation at APOGEE, BITS Pilani technical festival
December 2016	Received DAAD WISE scholarship 2017 for research internship in Germany
June 2014	Ranked in top 0.50% in IIT-JEE and 64 in WBJEE
February 2014	Offered KVPY fellowship by the Department of Science and Technology, Govt. of India

Coursework

Graduate:	**Deep Learning Seminar**; **Reinforcement Learning: Theory** & **Practice**; **Robot Learning**; **Natural Language Processing**; **Spoken Language Technologies**; **Math in Deep Learning**; **Statistical Models for Health and Behavioral Sciences**; Algorithms: Techniques and Theory; Programming Languages;
Undergraduate:	Neural Networks & Fuzzy Logic; Machine Learning; Advanced Calculus; Linear Algebra and Complex Variables; Probability and Statistics; Computer Programming; Operating Systems; Object Oriented Programming; Advanced Computer Architecture; Algorithms and Complexity; Data Structures; Discrete Mathematics
MOOC:	Stanford's CS231n: Convolutional Neural Networks for Visual Recognition; Stanford's CS224n:Natural Language Processing with Deep Learning; UC Berkeley's CS294: Deep Reinforcement Learning

Software Skills

Programming Language:	Python; C; C++; Java; Matlab
Autodifferentiation Framework:	PyTorch; Tensorflow; Caffe
Python Package:	Numpy; Scipy; SK-learn; Matplotlib; Seaborn; Plotly
Operating System:	Linux (Debian, Ubuntu); MS Windows
Distributed Version Control:	Git
Document Preparation:	LaTeX; MS Word

Teaching Experience

Semester 1, 2017-18: Teaching assistant for "Neural Networks and Fuzzy Logic" at BITS Pilani

Co-curricular Activities

2016-17: Project coordinator of Instrumentation Forum, BITS Pilani
2014-17: Member of BITS Firefox Community, Google Developers' Group and Instrumentation Forum at BITS PIlani

Extra-curricular Activities

2016-17: Cultural secretary of Moruchhaya, the Bengali cultural association at BITS Pilani
2014-18: Member of Moruchhaya