Anindya Mondal

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https://mondalanindya.github.io/

Education

Oct 2022 – Present **PhD Candidate**, *Surrey Institute for People-centred AI, CVSSP, University of Surrey*, Guildford, United Kingdom
Focus: Integrating Auxiliary Information for Representation Learning in Natural World

Aug 2018 – Jun 2022 **Bachelor of Electronics and Telecommunication Engineering (Hons.); GPA: 8.79/10**, *Jadavpur University*, Kolkata, India

Research Focus

2023-2024 **Video Representation Learning, Vision-Language, Multimodal Learning, Object Counting,** and **3D/4D Generation**

2020-2022 **Graph Neural Networks, Graph Signal Processing, Neuromorphic Vision, and Subspace Learning**

Research Experience

Oct 2022 – Present **Doctoral Researcher**, *Surrey Institute for People-centred AI, CVSSP, University of Surrey*, Guildford, UK

- Developed a novel class-agnostic object counting model leveraging semantic and geometric priors%.
- Formulated an actor-agnostic, transformer-based multimodal action recognition model, improving recognition precision by 50%.
- Leading the development of a comprehensive benchmark for animal action recognition, detection, and segmentation.

May 2022 – Aug 2022 **Research Intern**, *Indian Institute of Science*, Bengaluru, India

- Devised a novel source-free domain adaptation framework for image classification, increasing model robustness in target domains.

Oct 2020 – May 2022 **Undergraduate Research Assistant**, *Jadavpur University*, Kolkata, India

- Implemented a Sobolev norm minimization algorithm to reconstruct time-varying graph signals, significantly reducing data recovery errors.
- Developed a graph-based semi-supervised learning framework for semantic segmentation, demonstrating enhanced learning efficiency.
- Enhanced moving object detection from event data using a modified graph spectral clustering algorithm.

Publications

Preprints

Arxiv '24 **Anindya Mondal***, Sauradip Nag*, Xiatian Zhu, Anjan Dutta, *"OmniCount: Multi-label Object Counting with Semantic-Geometric Priors,"* DOI: 10.48550/arXiv.2403.05435.

Peer-Reviewed Publications

ICCVW '23 **Anindya Mondal***, Sauradip Nag*, Joaquin M Prada, Xiatian Zhu, Anjan Dutta*, *"Actor-agnostic Multi-label Action Recognition with Multi-modal Query,"* DOI: 10.1109/ICCVW60793.2023.00086.

ICASSP '23 JAC Correa*, JH Giraldo*, **Anindya Mondal***, et al., *"Time-varying Signals Recovery via Graph Neural Networks,"* DOI: 10.1109/ICASSP49357.2023.10096168.

EUSIPCO'22 **Anindya Mondal**, et al., *"Recovery of Missing Sensor Data by Reconstructing Time-varying Graph Signals,"* DOI: 10.23919/EUSIPCO55093.2022.9909940.

ICCVW '21 **Anindya Mondal***, R Shashant*, et al., *"Moving Object Detection for Event-based Vision using Graph Spectral Clustering,"* DOI: 10.1109/ICCVW54120.2021.00103.

Technical Skills

Languages Proficient in Python, MATLAB, C.

Libraries Experienced with PyTorch, Scikit-Learn, NumPy, SciPy, Pandas.

Tools Skilled in Git, LaTeX, Jupyter Notebook.

Awards and Honors

2022 Postgraduate Studentship, University of Surrey.

2022 Uplink Research Internship Award, ACM SIGKDD India Chapter.

Professional Experience

Teaching

2023, 2024 Teaching Assistant for Level M Applied Machine Learning (AML) and Advanced Topics in Computer Vision and Deep Learning (CVDL), University of Surrey.

Peer Review

2022-2024 Reviewed for top-tier conferences and journals, including IEEE ISBI, ICASSP, Transactions on Signal Processing, ICCV Workshops, ECCV, and NeurIPS.