Anindya Mondal

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Education

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

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

Research Focus

2023 – 2024: Vision-Language Integration, Multimodal Learning, Action Recognition, Text-to-Image Synthesis, Object Counting, and 3D/4D Content Generation.

2020 – 2022: Graph Neural Networks, Time-series Analysis, Graph Signal Processing, Neuromorphic Vision Systems, and Subspace Learning Techniques.

Publications

AAAI '25: **Anindya Mondal**, Sauradip Nag, Xiatian Zhu, Anjan Dutta, *"OmniCount: Multi-label Object Counting with Semantic-Geometric Priors,"* DOI: 10.48550/arXiv.2403.05435.

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.

Research Experience

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

- Developed a diffusion-based text-to-image generation model for high-quality exemplar generation aimed at object counting.
- Created a class-agnostic object counting model utilizing semantic and geometric priors, enhancing system adaptability.
- Designed and implemented a transformer-based multimodal action recognition model, boosting recognition accuracy by 50%.
- Led a project to establish a benchmark for animal action recognition, including detection and segmentation tasks.

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

- Innovated a source-free domain adaptation method for image classification, improving robustness across different target domains.

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

- Implemented a Sobolev norm minimization technique for reconstructing time-varying graph signals, reducing errors significantly.
- Developed a semi-supervised learning framework for semantic segmentation using graph theory, demonstrating improved efficiency.
- Enhanced detection of moving objects from event data using an adapted graph spectral clustering approach.

Technical Skills

Programming: Proficient in Python, MATLAB, C.

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

Tools: Proficient in Git, LaTeX, Jupyter Notebook, and Docker.

Awards and Honors

2024: Awarded the AAAI 2025 Conference cum Travel Grant (worth $1200), Philadelphia, USA.

2023: Awarded the ICCV 2023 Conference Grant, Paris, France.

2022: Awarded the Postgraduate Studentship at the University of Surrey, UK.

2022: Recipient of the Uplink Research Internship Award from ACM SIGKDD India Chapter.

Professional Experience

Teaching

2023 – 2024: Teaching Assistant for Applied Machine Learning (EEEM068) and Advanced Topics in Computer Vision and Deep Learning (EEEM071) at the University of Surrey.

Peer Review

2022 – 2024: Peer reviewer for ICASSP, ICCV, CVPR, ECCV, NeurIPS, ICPR, ICASSP, Transactions on Signal Processing (TSP), Transactions on Signal and Information Processing over Networks (TSIPN).