Shreelekha Revankar

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Education

Cornell University, Ithaca, NY 2023 - present
Ph.D. in Computer Science
Advised by Prof. Kavita Bala and Prof. Bharath Hariharan

University of Maryland, College Park, MD 2021-2022
M.S. in Computer Science
Advised by Prof. Ming Lin as a part of the combined BS/MS program

University of Maryland, College Park, MD 2017-2021
B.S. in Computer Science

Research Projects/Interests

Scale-Aware Recognition in Satellite Imagery 2023-2024
- Presented a novel scheme to determine (1) which resolution is best suited for recognizing a given concept, and (2) where and when should the costlier higher-resolution (HR) imagery be acquired.
- Achieved ~26.3% improvement over entirely HR baselines using 76.3% fewer HR images

Spatio-Temporal Event Understanding through Multi-Modal Learning 2024 - present
- Developing foundation models that fuse satellite imagery sequences with geo-coded text to enable comprehensive event analysis and understanding
- Curating large-scale multi modal datasets by automatically geo-coding text descriptions from online sources and temporally aligning with satellite imagery sequences

Large Scale Visual Discovery in Expert Settings 2023 - present
- Investigating novel representation learning approaches for large-scale unstructured visual data, leading to collaborations across archaeology, agriculture, and grape pathology

Work Experience

Shield AI - Behavior Engineering Intern, Rosslyn, VA 2021
- Developed novel search and relocation algorithms enabling coordinated swarm behavior in aerial vehicles without inter-vehicle communication, allowing for hivemind-like operations through decentralized local rules.

Bowers CIS Research - Graduate Research Mentor, Ithaca, NY 2024 - present
- Mentored two undergraduates on developing a vision-language foundation model for satellite imagery analysis, resulting in projected paper submission to NeurIPS 2025

Selected Publications (google scholar)

Revankar, Shreelekha, Cheng Perng Phoo, Utkarsh Mall, Bharath Hariharan, and Kavita Bala. "Scale-Aware Recognition in Satellite Images under Resource Constraints" *ICLR 2025*

Revankar, Shreelekha, Cheng Perng Phoo, Utkarsh Mall, Kavita Bala, and Bharath Hariharan. "Multi-Modal Model for Event Analysis in Satellite Imagery" ICCV 2025 (to be submitted)

Honors, Talks and Service

Invited Talk "Intelligent Selection of Resolution for Recognition" - AI Climate Institute 2024
Award "Outstanding TA" nomination by Prof. Anne Bracy 2024
Judge "Cornell Undergraduate Research Board's 2024 Spring Symposium" 2024
Graduate Mentor "SOftware-defined Network InterfaCe workshop" (SONIC) 2024

Skills

Proficient in Python, Java, C++, Kotlin, familiar with Ruby, OCaml, C, C#
Experienced in Deep Learning, Computer Graphics and Vision, Geospatial Computing, NLP, HCI