Nicholas Kashani Motlagh

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Profile Summary

Computer Science Ph.D. student with a focus on computer vision and language modeling, currently transitioning to multi-modal modeling. My work involves integrating vision and language systems for enhanced AI applications. Seeking a research internship to apply and expand my interdisciplinary skills in innovative AI settings.

Education

Ohio State University — Columbus, OH
Ph.D. in Computer Science & Engineering (AI Major) — Aug 2021 - Present
Minors: Mathematics, High-Performance Computing — GPA: 3.90

Ohio State University — Columbus, OH
B.S. in Computer Science & Engineering with Honors — Aug 2017 - May 2021
Minor: Mathematics — GPA: 3.86
Scholarships: Maximus, Ten-Hai Lai, Ansel, Name and Seal.

Experience

Ohio State University — Columbus, OH
Graduate Teaching Associate, CSE 5523 Machine Learning — August 2023 - Present

- Enhanced learning outcomes through office hours for 80 students in a theoretical Machine Learning course.

University of Dayton (sponsored by Air Force Research Laboratory) — Dayton, OH
Graduate Research Intern (Mentor: Dr. Matthew Scherreik & Dr. Tim Anderson) — Summer 2023

- Analyzed and mitigated issues in beam search for neural machine translation at large beam widths (U.S. CUI).
- Innovated 'Reject Option Beam Search' to improve translation quality (BLEU/Comet) at large beam widths.

Ohio State University (sponsored by Air Force Research Laboratory) — Columbus, OH
Graduate Research Associate, Computer Vision Lab — August 2021 - May 2023

- **ISVC 2022 Best Paper award:** Innovated a novel constrained optimization approach with per-class softmax thresholding, enhancing select accuracy by +0.4% with +1.3% coverage over naïve thresholding on the ImageNet dataset.
- Led a collaborative project with my advisor and two researchers from the Air Force Research Laboratory, driving the initiative from concept to implementation across multiple data modalities (synthetic, image, and text).
- Invited to submit an extended version to Machine Vision Applications special issue on Advances in Visual Computing.

Wright State University (sponsored by Air Force Research Laboratory) — Dayton, OH
Graduate Research Intern (Mentor: Dr. Matthew Scherreik & Dr. Tim Anderson) — Summer 2022

- Pioneered end-to-end training for naturally constrained Reject Option Classification (U.S. CUI).

Undergraduate Research Intern (Mentor: Dr. Roman Ilin) — Summer 2020/2021

- Engineered a semi-automated system for temporal satellite imagery collection and classification (ICCV 2021 Workshop).
- Innovated an ensemble distillation method to enhance model performance on ambiguous instances (U.S. CUI).

Concordia University (sponsored by SII Canada) — Montreal, Canada
Undergraduate Research Intern (Mentor: Dr. Khashayar Khorasani) — Summer 2019

- Led a UAV obstacle avoidance project using deep learning and single-image analysis (NDA).

Publications

N. Kashani Motlagh, J. Davis, T. Anderson, J. Gwinnup
"Naturally Constrained Reject Option Classification"
Machine Vision and Applications: Advances in Visual Computing, 2023 (in review)

N. Kashani Motlagh, J. Davis, T. Anderson, J. Gwinnup
"Learning When to Say 'I Don't Know'"
International Symposium on Visual Computing, October 2022 - ***Springer Best Paper Award***

N. Kashani Motlagh, A. Radhakrishnan, J. Davis, R. Ilin
"A Framework for Semi-automatic Collection of Temporal Satellite Imagery for Analysis of Dynamic Regions"
Learning to Understand Aerial Images (ICCV Workshop), October 2021

Technical Skills

Languages & Tools: Python, Pytorch, Huggingface, Bash, Git, Singularity containers, Slurm job scheduler

Professional Service

Volunteer: HackOHI/O '23; **Reviewer**: ICCV '23, CVPR '23, ECCV '22, CVPR '22