Cohen Gray Archbold

PhD Researcher in Computer Vision and AI with Expertise in Privacy-Preserving Machine Learning

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RESEARCH INTERESTS

DOMAINS Computer Vision, Signals Processing, Data Science, Machine Learning, Artificial Intelligence
INTERESTS AI Ethics, Privacy, Uncertainty, Distribution Modeling, Weak and Self-Supervision

EDUCATION

University of Kentucky Lexington, United States
PhD, Computer Science 2023 – Current

University of Kentucky Lexington, United States
Bachelors, Computer Science - *Summa Cum Laude* 2018 – 2022

EXPERIENCE

University of Kentucky Lexington Kentucky, United States
Research Assistant 2024 - Current

- Working under *Dr. Sen-ching Cheung*, I assisted in the research of methods for privacy preservation and bias assessment in computer vision tasks, specializing in generative models.
- Conducting literature review, manuscript writing, and research and development on state-of-the-art private generative methods for vision tasks.

University of Kentucky Lexington Kentucky, United States
Teaching Assistant 2022 – Current

- Assisted in the teaching of introductory courses in areas such as algorithms, data structures, discrete mathematics, computer networking, and cryptography.
- Responsible for leading, grading, and monitoring laboratory and recitation classes for 100+ students

University of Kentucky Lexington Kentucky, United States
Research Assistant 2023 - 2024

- Working under Dr. Abdullah-Al-Zubaer Imran, I assisted in the research of methods for computer vision tasks in biomedical imaging and human image understanding.
- Led the design and implementation of a comprehensive framework for privacy preserving protest analysis, culminating in a publication at WIFS 2024.
- Co-led implementation and design for the MIDRC open challenge for COVID detection in chest x-ray imagery, placing 6th in the global competition.

University of Kentucky Lexington Kentucky, United States
Undergraduate Research Assistant 2019-2022

- Conducted research under the supervision of *Dr. Nathan Jacobs*, focusing on the development and evaluation of advanced computer vision methods for remote sensing applications.
- Led the design and implementation of a novel weak supervision method to assess property values using aerial imagery, culminating in a publication at IGARSS 2024.

HONORS

MIDRC Mastermind mRale Challenge Winner 2023
6th place winner of the open challenge to predict COVID severity by the multi-institutional Medical Imaging and Data Resource Center

PUBLICATIONS

2024 **Privacy Preserving Protest Dynamics**
Archbold, C, Hassan, U., Sakib, N., Cheung, S., Imran A.
Accepted at the 2024 IEEE Workshop on Information Forensics and Security (WIFS)

2023 **Fine-Grained Property Value Assessment using Probabilistic Dissagregation**
Archbold, C, Hassan, U., Sakib, N., Cheung, S., Imran A.
Accepted at the 2023 IEEE International Geoscience and Remote Sensing Symposium (IGARSS)

TEACHING

University of Kentucky	**Teaching Assistant**
CS275: Discrete Mathematics	Spring 2025
CS371: Intro to Computer Networking	Fall 2024
CS378: Intro to Cryptology	Spring 2024
CS215: Intro to Program Design Abstraction/Problem Solving	Spring 2023
CS216: Intro to Software Engineering Techniques	Fall 2022
University of Kentucky	**Lead Instructor**
CS275: Discrete Mathematics	Summer 2024

SKILLS

- Python · C/C++ · Pytorch · TensorFlow · Git · Linux
- LaTeX· Overleaf · Microsoft Suite
- English-*(Native)* · Español-*(Beginner)*