

Elahe Vahdani

Ph.D. Graduate, Computer Science

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New York, NY | Permanent Resident of the USA

SUMMARY

Dedicated and detail-oriented Computer Science Ph.D. graduate with a proven track record of 6 years in computer vision, technical research, and data analysis.

Skilled in algorithm design, software development, and machine learning, adept at spearheading innovative solutions and tackling intricate real-world challenges.

Demonstrated expertise in video understanding, image processing, and weakly-supervised learning, driving advances in visual data analysis and the development of intelligent, autonomous systems.

EDUCATION

Doctor of Philosophy in Computer Science

The City University of New York

Graduation: Fall 2023

New York, NY

Master of Philosophy in Computer Science

The City University of New York

New York, NY

Bachelor of Science in Mathematics

Sharif University of Technology

Tehran, Iran

PROFESSIONAL EXPERIENCE

Graduate Researcher, The City College of New York

Sep 2018 – 2023

- **Deep Learning-Based Human Action Understanding in Videos**

- Proposed two groundbreaking frameworks for weakly-supervised action detection in untrimmed videos, achieving remarkable performance gains over the state-of-the-art on benchmark datasets.
- Innovated a multi-modal multi-channel framework for comprehensive video understanding.
- Designed the first framework for automated detection of signing errors in sign language videos.
- Engineered an educational software that autonomously assesses sign language fluency in videos.

- **Object Detection with Cross-Modality Bridging**

- Designed an innovative framework that bridges modalities between mesh, point-cloud, and images, surpassing the performance of existing cross-modal retrieval methods.

- **Multi-camera Vehicle Tracking and Re-identification on AI City Challenge**

- Developed a multi-granularity network for the extraction of visual features from vehicles, achieving a substantial performance improvement over the state-of-the-art methods in vehicle Re-Identification.

Research Science Intern, Dataminr

Fall 2021

- **Audio-visual Event Localization**

- Conducted pioneering research in the field of event localization from audio-visual signals, leveraging limited supervision to develop innovative methodologies.

Data Science Intern, Expedia Group

Summer 2021

- **Image Scene Classification**

- Developed image scene classifiers and rigorously evaluated their performance in the presence of noise and artifacts, ensuring their robustness and reliability.

TECHNICAL SKILLS

Skills

- Machine Learning, Computer Vision, Natural Language Processing, Generative AI, Large Language Models (LLMs), Deep Learning, Video Understanding, Weakly-Supervised Learning, Reinforcement Learning, Adversarial Learning.

Technologies

- Python, C++, MATLAB, R, PyTorch, Tensorflow, TensorboardX, Scikit-learn, OpenCV, Linux, Git, Docker, \LaTeX .

TEACHING EXPERIENCE

Adjunct Lecturer, The City College of New York

2018 – 2023

- CSc 21700 - Probability and Statistics
- CSc 22000 - Algorithms
- CSc 10300 - Introduction to Computing

PUBLICATIONS

- [1] **E. Vahdani**, Y. Tian, “[ADM-Loc: Actionness Distribution Modeling for Point-supervised Temporal Action Localization](#)”, arXiv, 2023.
- [2] **E. Vahdani**, Y. Tian, “[POTLoc: Pseudo-Label Oriented Transformer for Point-Supervised Temporal Action Localization](#)”, arXiv, 2023.
- [3] **E. Vahdani**, L. Jing, M. Huenerfauth, and Y. Tian, “[Multi-Modal Multi-Channel American Sign Language Recognition](#)”, **IJAIR**, 2023.
- [4] **E. Vahdani**, Y. Tian, “[Deep learning-based action detection in untrimmed videos: A survey](#)”, **IEEE TPAMI**, 2022.
- [5] L. Jing, **E. Vahdani**, J. Tan, and Y. Tian, “[Cross-Modal Center Loss for 3D Cross-Modal Retrieval](#)”, **CVPR**, 2021.
- [6] **E. Vahdani**, L. Jing, Y. Tian, and M. Huenerfauth, “[Recognizing American sign language nonmanual signal grammar errors in continuous videos](#)”, **ICPR**, 2020.
- [7] S. Hassan, L. Berke, **E. Vahdani**, L. Jing, Y. Tian, and M. Huenerfauth, “[An isolated-signing RGBD dataset of 100 American Sign Language signs produced by fluent ASL signers](#)”, **LREC**, 2020.
- [8] Y. Chen, L. Jing, **E. Vahdani**, L. Zhang, M. He, and Y. Tian, “[Multi-camera Vehicle Tracking and Re-identification on AI City Challenge 2019](#)”, **CVPRW**, 2019.
- [9] **E. Vahdani**, A. Bar-Noy, M. P. Johnson, and T. Abdelzaher, “[Gathering Information in Sensor Networks for Synchronized Freshness](#)”, **IEEE SECON**, 2017.

HONORS AND AWARDS

N2 Women - IEEE Communications Society Grant	2018
Doctoral Student Research Grant, CUNY	2017
Science Fellowship, Awarded by City University of New York	2015
Bronze Medal in National Informatics Olympiad, Iran	2007

SERVICE

Reviewer for Conference on Computer Vision and Pattern Recognition (CVPR), IEEE Transactions on Multimedia (TMM), Computer Vision and Image Understanding (CVIU), Journal of Machine Vision and Applications (MVAP), Journal of Visual Communication and Image Representation (JVCI).