Elahe Vahdani

Ph.D. in Computer Science

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New York, NY | Permanent Resident of the USA

Summary

- Computer Science Ph.D. with 6 years of experience in computer vision, specializing in advanced technical research and data analysis, with a proven record of delivering tangible results in computer vision projects.
- Proficient in algorithm design and software development, coupled with a strong foundation in machine learning. Recognized for developing innovative solutions to complex real-world challenges.
- Expert in video analysis and image processing, focusing on limited-supervision learning. Instrumental in advancing visual data analysis and contributing to the development of intelligent, autonomous systems.

Education

Doctor of Philosophy in Computer Science — Graduation: Fall 2023

The City University of New York — 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

- Developed two cutting-edge models for limited-supervision action detection in untrimmed videos.
- Created a multi-modal multi-channel framework for sign language understanding.
- Designed a model for automated detection of signing errors in sign language videos.
- Developed an educational software for autonomous assessment of sign language fluency in videos.
- Innovated a novel cross-modal retrieval framework for mesh, point-cloud, and image modalities.
- Designed a multi-granularity network for vehicle feature extraction in AI City Challenge.

Adjunct Lecturer, The City College of New York — 2018 – 2023

- Instructed courses in Algorithms, Probability and Statistics, and Introduction to Computing.

Research Science Intern, Dataminr — Fall 2021

- Conducted pioneering research in event localization from audio-visual signals.

Data Science Intern, Expedia Group — Summer 2021

- Developed image scene classifiers and evaluated their robustness in the presence of noise and artifacts.

Technical Skills

Skills

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

Technologies

- Python, C++, MATLAB, R, MySQL, Java, JavaScript, PHP, HTML, PyTorch, Tensorflow, TensorboardX, Scikit-learn, OpenCV, Linux, Git, Docker, LaTeX.

Honors and Awards

N2 Women - IEEE Communications Society Grant	2018
Doctoral Student Research Grant, CUNY	2018
Science Fellowship, Awarded by City University of New York	2018
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).

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.