Elahe Vahdani

Ph.D. in Computer Science (Graduated in Fall 2023)

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New York, NY | Permanent Resident of the USA

Summary

Publication and Collaboration

- Authored 9 peer-reviewed publications in leading AI conferences and journals (CVPR, CVPRW, TPAMI) with first-author status in 7 papers including equal contribution.

Selected Machine Learning Research Projects

- Improved weakly-supervised action detection by 5% mAP on the THUMOS'14 benchmark video dataset.
- Enhanced 3D/2D object retrieval performance by 8% mAP on the ModelNet40 benchmark dataset.
- Top-ranked in the 2019 AI City Challenge, achieving a 16.3% improvement in vehicle re-identification.

Software Development and Implementation Skills

- Over 10 years of programming experience and 8 years in machine learning and deep learning development.
- Developed educational software utilizing deep learning for sign language analysis in videos.

Education

Doctor of Philosophy in Computer Science 2018 - 2023

- The City University of New York, *New York, NY*

Master of Philosophy in Computer Science 2015 - 2018

- The City University of New York, *New York, NY*

Bachelor of Science in Mathematics 2009 - 2014

- Sharif University of Technology, *Tehran, Iran*

Internship Experience

Research Science Intern, Dataminr, *New York, NY* Fall 2021

- Conducted research on localizing events in videos from audio-visual signals.

Data Science Intern, Expedia Group, *Seattle, WA* Summer 2021

- Applied Generative Adversarial Networks to reduce noise and enhance quality in real-world images.

Technical Skills

Related Knowledge: Machine Learning, Deep Learning, Computer Vision, Natural Language Processing.

Machine Learning/Data Analysis: Databricks, Spark, Map Reduce, Hadoop, Rapid Miner, Scikit-learn.

Programming Languages: Python, C++, MATLAB, R, Java, JavaScript, PHP.

Deep Learning: PyTorch, Tensorflow, TensorboardX, MLflow, Caffe, Keras, OpenCV, CUDA/CUDNN.

General: Linux, Git, Docker, MySQL, LaTeX.

Honors and Awards

Doctoral Student Research Grant, awarded by the National Science Foundation. 2020

Science Fellowship, awarded by the City University of New York. 2018

Bronze Medalist in the National Informatics Olympiad, Iran. 2006

Service

Reviewer: Reviewed top AI conferences and journals, including CVPR, TMM, CVIU, MVAP, and JVCI.

Adjunct Lecturer: Instructed undergraduate computer science courses such as Probability and Statistics, Algorithms, and Introduction to Computing at the City University of New York.

Publications

[1] **E. Vahdani**, Y. Tian, "ADM-Loc: Actionness Distribution Modeling for Point-supervised Temporal Action Localization", *(Under Review)*, 2024.

[2] **E. Vahdani**, Y. Tian, "POTLoc: Pseudo-Label Oriented Transformer for Point-Supervised Temporal Action Localization", *Computer Vision and Image Understanding* (CVIU), 2024.

[3] **E. Vahdani**, L. Jing, M. Huenerfauth, and Y. Tian, "Multi-Modal Multi-Channel American Sign Language Recognition", *International Journal of Artificial Intelligence Research*, (IJAIR) 2023.

[4] **E. Vahdani**, Y. Tian, "Deep learning-based action detection in untrimmed videos: A survey", *IEEE Transactions on Pattern Analysis and Machine Intelligence* (TPAMI), 2022.

[5] L. Jing*, **E. Vahdani***, J. Tan, and Y. Tian, "Cross-Modal Center Loss for 3D Cross-Modal Retrieval", (*Equal Contribution), *IEEE/CVF Conference on Computer Vision and Pattern Recognition* (CVPR), 2021.

[6] **E. Vahdani**, L. Jing, Y. Tian, and M. Huenerfauth, "Recognizing American sign language nonmanual signal grammar errors in continuous videos", *The International Conference on Pattern Recognition* (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", *The International Conference on Language Resources and Evaluation* (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", *IEEE/CVF Conference on Computer Vision and Pattern Recognition Workshops* (CVPRW), 2019.

[9] **E. Vahdani**, A. Bar-Noy, M. P. Johnson, and T. Abdelzaher, "Gathering Information in Sensor Networks for Synchronized Freshness", *IEEE International Conference on Sensing, Communication, and Networking* (SECON), 2017.