Ali AlShami

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Summary

Graduate Research Assistant and a Ph.D. candidate with more than five years of robust experience in Machine Learning, Computer Vision, Natural Language Processing, and predictive modeling. Complementing this is another four years of expertise in commercial system engineering. Research focuses on recognizing human actions based on vision in sports and Autonomous Vehicles. I am open for internship or co-op opportunities starting in January 2025.

Technical skills

- Languages: 5+ years' experience Python, R, SQL, D3.js, and C++
- Proficient: 5+ years' experience Computer Vision, Machine Learning.
- Knowledge: Human Action Recognition Vision based, Explainable AI, and Predictive modeling
- Programming Skills: 4+ years' experience in PyTorch, TensorFlow, Scikit-learn, OpenCV, NumPy, Pandas, Matplotlib, and Tkinter
- Machine Learning Architecture: CNNs, RNN/LSTMs, and Transformers
- Software Developing tools: GitHub, Git
- Cloud Computing: 2+ years' experience with AWS or Microsoft Azure
- Software Developing tools: GitHub, Git, and others
- Other Skills: Research, Leadership, Problem-solving

Job Experience

Graduate Research Assistant | VAST & LINC Labs, University of Colorado, Colorado Springs | Aug 2019 - Present

- Collaborated with Maryland University to develop a novel underlying theory for image classification.
- Improved anomaly detection accuracy by 11% using machine learning extreme value theory.
- Led a team of students to build a Subject-Verb-Object (SVO) dataset of more than one million labeled images.
- Developed a GUI application to enable team to efficiently clean the data and use AWS tools, S1 and SageMarker, to relabel the images.
- Created a 3D motion capture dataset from video based on 2D/3D human pose estimation for simulated characters.

Graduate Teacher Assistant| Computer Science Department, University of Colorado, Colorado Springs | Aug 2023 - Present

- GTA for high-level courses like Artificial Intelligence, Machine Learning, and Artificial Neural Networks.
- Provided support and guidance to students on research, class project, and resolving complex technical issues in coding.

Telecommunications Engineering | L3harries technologies | Mar 2012 - Mar 2017

- Led a team of engineers as a project leader and implementing multiple projects, including VSAT systems and point-to-point microwave link.
- Installed 185 VSAT systems for military bases.
- Provided an internet services with installation VSAT systems for big oil companies, including Exxon mobile, Marathon, Shells, and BP.
- Collaborated with Siemens to implement the synchronization system project that improved the cell phone service by 6%.

Education

University of Colorado at Colorado Springs, Jan 2021 - present Ph.D. of Science in Computer Science | GPA 3.97/4.00 University of Colorado at Colorado Springs, Graduated: Dec 2021 Master of Science in Computer Science | GPA 3.94/4.00 Al-Mansour University College, Graduation: May 2009 Bachelor of Science in Software Engineering | GPA 3.26/4.00

Current Research

- Develop a novel Multi-Deep Learning model for Human action recognition task in videos sequences.
- Led a team of students from UCCS and Can Tho University in collaboration with Dr. Khang Nhut Lam to create a robust dataset for autonomous vehicles system. This dataset will serve as a challenge for a workshop at the WACV conference.
- Develop a novel multi Deep Learning modal that aims to predict pedestrian crossing intention using visual and non-visual information for autonomous vehicles.

Achievements:

- Collaborated with four universities to build Subject-Verb-Object (SVO) system that increased classification accuracy by 12%.
- Published a research paper titled "Pose2Trajectory: Using transformers on body pose to predict tennis player's trajectory" to Visual Commendation and Image Representation Journal.
- Published a research paper entitled "Novelty in Image Classification" with Springer Nature Switzerland.
- Accepted a survey paper in Explainable Artificial Intelligent (XAI) to Neurocomputing Journal.
- Submitted a comprehensive survey in Human Action Recognition vision based to International Journal of Computer Vision (IJCV).