

Ahmad Amirivojdan

📍 Knoxville, TN ✉ amirivojdan@gmail.com ☎ (+1) 865-771-4443 🔗 amirivojdan.io
 🎓 scholar in amirivojdan 🌐 amirivojdan

Summary

Applied Scientist with 5+ years in Computer Vision, Machine Learning, and Software Development. Successfully applied deep learning techniques to challenging problems in autonomous robotics, smart agriculture, and natural language processing, demonstrating a track record as a published researcher and active open-source contributor.

Skills

Core AI & ML: Deep Learning, Computer Vision, NLP, Representation Learning, Audio Analysis, Statistical Modeling

Robotics & Embedded: PLC Programming (Delta DVP), FreeRTOS, IMU Sensors, CAD (Catia, Autodesk Inventor)

Frameworks: PyTorch, HuggingFace, Scikit-Learn, OpenCV, LangChain

Programming: Python, C++, C#, SQL, Bash

Data & Cloud: AWS, Docker, FastAPI, Vuejs, Tailwind CSS, PySpark, MongoDB, GitHub Actions, Linux

Research & Development: Model Training & Evaluation, Experiment Design, Data Curation, Unit Testing

Soft Skills: Collaboration, Leadership, Technical Writing, Mentorship

Education

- | | |
|---|--|
| <p>Ph.D. University of Tennessee Knoxville, Biosystems Engineering</p> <ul style="list-style-type: none"> • Courseworks: Deep Learning, Machine Learning, Data Mining and Analytic, Large Language Modeling & GenAI, Bio-Inspired Computation, Natural Language Processing, Embedded Systems, Regression Modeling, Statistics for Research, Electronic Systems, Mathematical Modeling, Advanced Software Engineering, Geographic Information Science (GIS) | <p>Feb 2022 to Dec 2026
(Expected)</p> |
| <p>M.S. Qods Azad University, Artificial Intelligence & Robotics</p> <ul style="list-style-type: none"> • Courseworks: Mobile Robotics, Image Processing, Pattern Recognition, Fuzzy Logic, Swarm Intelligence, Machine Learning • Research: Development of an in-field vision system to detect saffron flowers using Histogram of Gradients (HOG) features and an SVM classifier Github | <p>Sept 2016 to Jan 2020</p> |
| <p>B.S. Parand Azad University, Computer Hardware Engineering</p> <ul style="list-style-type: none"> • Research: Development of a fully autonomous humanoid soccer robot consisting locomotion, vision, low-level IO, balancing, and behavior modules to compete in the RoboCup soccer competitions. Github - Video | <p>Sept 2010 to Jan 2016</p> |

Selected Works

- | | |
|--|-------------------|
| <p>Shekar: A Python Toolkit for Persian Natural Language Processing Github
 <i>The Journal of Open Source Software</i> - Ahmad Amirivojdan 10.21105/joss.09128</p> | <p>Oct 2025</p> |
| <p>ChickenSense: A Low-cost Deep Learning-based Solution for Poultry Feed Consumption Monitoring Using Sound Technology Github
 Ahmad Amirivojdan, Amin Nasiri, Shengyu Zhou, Yang Zhao, Hao Gan
 10.3390/agriengineering6030124</p> | <p>July 2024</p> |
| <p>An automated video action recognition-based system for drinking time estimation of individual broilers
 Amin Nasiri, Ahmad Amirivojdan, Yang Zhao, Hao Gan
 10.1016/j.atech.2024.100409</p> | <p>March 2024</p> |

Awards and Honors

1st Place - Robocup Humanoid Soccer Teen-Size Robot League	Aug 2015 - China
3rd Place - Robocup Humanoid Soccer Teen-Size Robot League	Aug 2014 - Brazil
2nd Place - IranOpen International - Humanoid Soccer Kid-Size Robot League	Apr 2016
1st Place - IranOpen International - Humanoid Soccer Teen-Size Robot League	Apr 2013

Experience

UT Smart Agriculture Lab , Graduate Research Assistant	TN, USA Feb 2022 - Dec 2026 (Expected)
- Designed and deployed automated 3D video acquisition system for poultry research, capturing 1+ TB of data and annotating 4,000+ mask images for instance segmentation tasks. - Trained state-of-the-art computer vision models (YOLO, Rt-DETR) and Masked Autoencoder (MAE) for high-resolution representation learning on agricultural imagery. - Developed audio-based deep learning system achieving 92% accuracy in estimating poultry feed intake by analyzing piezoelectric sensor data and pecking event patterns. - Conducted statistical validation of model predictions using hypothesis testing and performance metrics, ensuring robustness for real-world deployment.	
Kimia Motor , Research and Development Engineer	Aug 2021 - Feb 2022
- Analyzed production workflows and identified bottlenecks, proposing efficiency improvements across manufacturing lines. - Designed and deployed automated wire feeder for brake production line, improving precision and reducing defect rates. Grabcad - Developed two-axis linear motion system for gear shifting test bed and Python-based joystick controller interfacing with Delta DVP-SA2 PLC via Modbus protocol. Grabcad	
Pars Ertebat , Fullstack Software Engineer	May 2016 - Aug 2021
- Contributed to the development of a horse racing betting solution, achieving an annual revenue of \$32 million for the Equestrian Federation of Iran, with over users. - Developed the back-end of a social media app containig authentication, user management, report generation, etc.	
Parand Robotics Research Center , Undergraduate Research Assistant	Jan 2012 - Apr 2016
- Led software development for an autonomous humanoid soccer robot, implementing omni-directional bipedal locomotion with IMU-based PID stabilization and real-time ball tracking using computer vision and contour segmentation. - Architected multi-threaded modular software system following SOLID and OOP principles, integrating FSM-based behavior control with low-level servo actuator and sensor interfaces. - Developed open-source IMU platform with Atmega32 firmware, C# libraries, configuration tools, and 3D simulator compatible with Dynamixel protocol. Github	

Certifications

Natural Language Processing Specialization - Coursera	Apr 2025
Developing LLM Applications with LangChain - DataCamp	Nov 2024
Build Basic Generative Adversarial Networks (GANs) - Coursera	Apr 2025
Big Data Fundamentals with PySpark - DataCamp	Nov 2024
AWS Cloud Practitioner Essentials - Amazon Web Services	Oct 2024
Machine learning in Python with Scikit-Learn - France Université Numérique	Jan 2023
The Power of Statistics - Coursera	Aug 2023
Docker Foundations Professional Certificate - Docker	Sept 2024
Advanced C++: Building Projects with CMake - LinkedIn	Sept 2025
Test-Driven Development in C++ - LinkedIn	Sept 2025