Reza Yazdi

PhD in Artificial Intelligence & Robotics
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Linkedin — Google Scholar

Education

Bu-Ali Sina (Avicenna) University, Hamadan, Iran
PhD, Artificial Intelligence & Robotics 2019–2024
Thesis: Automated Multi-Cell Tracking in Time-Lapse Microscopy Images, Considering Cell Lineage

Iran University of Science and Technology, Tehran, Iran
Master of Science (MSc), Artificial Intelligence & Robotics 2012–2015
Thesis: Detecting Mass Region Candidates in three-dimensional breast ultrasonic images

Mazandaran University, Mazandaran, Iran
Bachelor's degree, Computer Science 2005–2009

Research Interests

- Machine Learning, Deep Learning, Computer Vision, Natural Language Processing
- Self-supervised Learning, Explainable AI, Biomedical Image Analysis

Research Experience

I-Trap, Automated pest monitoring system, Iran's National Elites Foundation (INEF) 2020–2021

- Developed deep learning models for early pest detection.
- Honored as the "Top Project in Smart Farming" by INEF.

EMOB, Elite mobility and movement prediction system, INEF 2022–2023

- Designed and implemented a data-driven framework to analyze elite mobility patterns.
- Developed machine learning models to predict elite movement and career transitions.

Postgraduate Researcher, AI Lab, Department of Industrial Engineering at Sharif University of Technology 2025 – Present

- Self-supervised computer vision models for automated defect detection in steel sheets.
- Led a team of 2 students, overseeing model development and performance evaluation.

Publications

1. Yazdi, R., & Khotanlou, H. (2024). MaxSigNet: Light learnable layer for semantic cell segmentation. *Biomed. Signal Process. Control.*, 95, 106464. doi.org/10.1016/j.bspc.2024.106464
2. Yazdi, R., Khotanlou, H. A survey on automated cell tracking: challenges and solutions. *Multimed Tools Appl* (2024). doi.org/10.1007/s11042-024-18697-9

3. Yazdi, R. and Khotanlou, H., "Robust Corner Detector Based on Local Maximum and Minimum Differences," 2024 10th International Conference on Web Research (ICWR), Tehran, Iran, 2024, pp. 92-98. doi.org/10.1109/ICWR61162.2024.10533379
4. R. Yazdi, H. Khotanlou, E. Alighardash and M. Zolfaghari, "Edge Detection Method Based on the Differences in Intensities of Rotating Kernel Borders," 2023 6th International Conference on Pattern Recognition and Image Analysis (IPRIA), Iran, 2023, pp. 1-5. doi.org/10.1109/IPRIA59240.2023.10147182
5. Yazdi, R. and Khotanlou, H., "Cell division detection using Cassini oval," 2024. doi.org/10.2139/ssrn.4752301
6. Yazdi, R., Khotanlou, H., & Khademfar, H. (2024). Robust Corner Detection Using Local Extrema Differences. *International Journal of Web Research*, 7(1), 69-84. doi.org/10.22133/ijwr.2024.458246.1217
7. Yazdi, R., Yazdi, M., "Revolution in Earth Sciences: Applications of Artificial Intelligence in Mineral, Water, Oil and Gas Exploration, and Natural Hazard Prediction", 27th conference of Geological society of Iran, Tehran, Iran, 2024.
8. Yazdi, R. and Khotanlou, H., "Automatic Cell Tracking in Time-Lapse Microscopy Images," *journal of Machine Vision and Image Processing*, 2024, 11(2), 25-37. https://jmvip.sinaweb.net/article208630.html
9. Elham Alighardash, E., Saati, S., Shokri, A., Amini, P., Abdi, H., Amin, V., Yazdi, R., "A study of image processing techniques application for detection of proximal caries in Iran", *Daneshvar Medicine*, 2020. doi.org/10.22070/daneshmed.2020.2978

Skills

- **Languages:** Python, C++, PHP, Django
- **Frameworks:** PyTorch, Opencv, NumPy, Scikit-learn, Matlab
- **Tools:** Git, LaTeX

Funding, Scholarships and Awards

- Full governmental scholarship for PhD studies, Bu-Ali Sina University (2019–2024).
- Research grant for I-Trap project, Iran's National Elites Foundation (INEF) (2020–2021).
- Research grant for EMOB project, Iran's National Elites Foundation (INEF) (2022–2023).
- Research grant for Postgraduate Researcher position, Sharif University of Technology (2025–Present).
- Awarded Top Researcher in the Faculty of Engineering, Bu-Ali Sina (Avicenna) University, Hamadan, Iran - 2024
- Best Paper Award, 10th International Conference on Web Research (ICWR) - 2024

Teaching Experience

- Visiting Lecturer, East Higher Education Institute of Gonbad Kavous 2022–Present

  Courses Taught (Graduate Level - M.Sc. in AI):

  * Machine Learning
  * Neural Networks & Deep Learning
  * Image Processing

  Supervision & Research Guidance:

  * Advised 3 M.Sc. theses (2 completed, 1 ongoing) in AI/ML topics.
  * Collaborated with students to publish results.

- Lecturer, Gonbad Kavous University 2021–Present

Courses Taught (Undergraduate Level):

* Information Retrieval
* Artificial Intelligence
* Internet and Network Fundamentals
* Design and Analysis of Algorithms
* AI-powered Software Development

- High School Teacher 2011–Present

Courses Taught:

* Computer Science
* Artificial Intelligence

Conferences & Workshops

- IPRIA 2023 – Poster Presenter
- ICWR 2024 – Attendee

Languages

- English (Upper-Intermediate)
- Persian (Native)
- Azerbaijani (Native)

Interests and Activities

- AI Advocacy & Outreach
  - Organized 10+ free AI workshops for 500+ students in Iran (2019–2025)
  - Created Persian-language tutorial series on AI for students.
  - Volunteer mentor at Kagglephilic community.
- Motorcycle-based wilderness exploration
- Nature trekking & Mobile photography

Referees

Prof. Hassan Khotanlou (PhD supervisor)
Department of Computer Science, Bu-Ali Sina University
khotanlou@basu.ac.ir

Prof. Muharram Mansoorizadeh
Department of Computer Science, Bu-Ali Sina University
mansoorm@basu.ac.ir

Prof. Erfan Hassannayebi
Department of Industrial Engineering, Sharif University of Technology
hassannayebi@sharif.edu