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Amir Salarpour

ACADEMIC APPOINTMENTS

Postdoctoral Research Associate — Clemson University — School of Computing (TigerSec Lab)
Clemson, SC — Jan. 2024 – Present

- Advisor: Prof. Mert Pesé. Research in autonomous-vehicle (AV) perception security: adversarial sensing; robust 3D point clouds.
- Mentoring: 5 graduate/undergraduate researchers; collaborations with campus AV groups and security labs.

Visiting Researcher — CyLab, Carnegie Mellon University
Pittsburgh, PA — Jan. 2023 – Dec. 2023

- Point-cloud perception for AVs. Supervisor: Prof. Raj Rajkumar.

Assistant Professor of Computer Science — Sirjan University of Technology
Sirjan, Iran — Sep. 2018 – Dec. 2022

- Department Chair, Computer Science (Mar. 2020 – Dec. 2022).
- Director, International Academic Cooperation (Jun. 2021 – Apr. 2022).

EDUCATION

Ph.D. in Computer Science (Artificial Intelligence) — Bu-Ali Sina University
Hamedan, Iran — 2012–2018

- GPA: 19.60/20
- Thesis: *Spatial Interaction of Human–Robot and Social Path Planning*
- Supervisors: Dr. H. Khotanlou; Dr. N. Mavridis

M.Sc. in Computer Science (Artificial Intelligence) — Bu-Ali Sina University
Hamedan, Iran — 2008–2011

- GPA: 18.34/20
- Thesis: *Object Detection and Occlusion Issues in Vehicle Tracking Application*

B.Sc. in Computer Engineering (Software) — Shahid Bahonar University of Kerman
Kerman, Iran — 2003–2008

- Project: *Beat Rate Extraction from ECG Signal Using Wavelet and Fourier Transforms*

RESEARCH INTERESTS

- **Autonomous Perception Security:** adversarial sensing/attacks; robust perception for AV pipelines; evaluation & defense
- **3D Computer Vision (Point Clouds):** classification/segmentation; registration; 3D detection & tracking; geometric deep learning
- **Trustworthy ML:** adversarial robustness; data-efficient training; uncertainty estimation for perception systems

Selected Publications

[1] D. Fernandez, P. MohajerAnsari, **A. Salarpour**, L. Cheng, A. Razi, and M. D. Pesé, "Comparative analysis of patch attack on vlm-based autonomous driving architectures", in *2026 IEEE Intelligent Vehicles Symposium (IV)*, Accepted; to appear (June 2026), IEEE, 2026.

[2] P. MohajerAnsari, **A. Salarpour**, M. Kühr, S. Huang, M. Hamad, S. Steinhorst, B. Li, and M. D. Pesé, "Toward inherently robust vlms against visual perception attacks", in *2026 IEEE Intelligent Vehicles Symposium (IV)*, Accepted; to appear (June 2026), IEEE, 2026. arXiv: 2506.11472.

[3] M. Saeid, **A. Salarpour**, P. MohajerAnsari, and M. D. Pesé, "Npnet: A non-parametric network with adaptive gaussian-fourier positional encoding for 3d classification and segmentation", in *2026 IEEE Intelligent Vehicles Symposium (IV)*, Accepted; to appear (June 2026), IEEE, 2026. arXiv: 2602.00542.

[4] M. Saeid, **A. Salarpour**, P. MohajerAnsari, and M. D. Pesé, "Slnet: A super-lightweight geometry-adaptive network for 3d point cloud recognition", in *2026 IEEE International Conference on Robotics and Automation (ICRA)*, Accepted; to appear (June 2026), IEEE, 2026.

[5] D. Fernandez, P. MohajerAnsari, C. Kokenoz, **A. Salarpour**, B. Li, and M. D. Pesé, "Wip: From detection to explanation: Using llms for adversarial scenario analysis in vehicles", in *3rd USENIX Symposium on Vehicle Security and Privacy (VehicleSec 25)*, 2025, pp. 315–324.

[6] D. Fernandez, P. MohajerAnsari, **A. Salarpour**, and M. D. Pesé, "Avoiding the crash: A vision-language model evaluation of critical traffic scenarios", SAE International, SAE Technical Paper 2025-01-8213, 2025, Best Paper Award (SAE/WCX 2025).

[7] P. MohajerAnsari, **A. Salarpour**, D. Fernandez, C. Kokenoz, B. Li, and M. D. Pesé, "Attention-aware temporal adversarial shadows on traffic sign sequences", in *Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)*, 2025, pp. 3591–3599.

[8] M. Mohammadi and **A. Salarpour**, "Point-gn: A non-parametric network using gaussian positional encoding for point cloud classification", in *2025 IEEE/CVF Winter Conference on Applications of Computer Vision (WACV)*, IEEE, 2025, pp. 3487–3496.

Grants & Fellowships

Awarded

- **Key Personnel:** Resilient Autonomous Vehicle Perception Under Adversarial Settings | U.S. DOT UTC (TraCR) Jan. 2025–Dec. 2025

  Total value: *$276,314 (federal + cost-share) Focus: model-end defenses and VLM-based detection for robust AV perception*

Under Review

- **Co-PI:** NSF Secure and Trustworthy Cyberspace (SaTC) | Medium   Requested: $600,000 | Submitted: Aug. 2025

  Theme: secure/robust autonomous perception under adversarial settings. Status: under review

Teaching

Instructor of Record — Clemson University, School of Computing   *Clemson, SC*
CPSC 4200 Computer Security Principles (Spring 2026)
CPSC 8580 Security in Emerging Computing and Networking Systems (Spring 2025)   2025 – Present

  - Designed syllabi and assessments; delivered all lectures

  - Developed hands-on labs/projects and grading rubrics; supervised final projects

    – Coordinated TAs/graders and managed feedback cadence

Instructor of Record — Sirjan University of Technology (Assistant Professor)   *Sirjan, Iran*
                                                              Sep. 2018 – Dec. 2022

- **Graduate (M.Sc.):** Machine Learning; Deep Learning; Pattern Recognition; Image Processing; Advanced AI
- **Undergraduate (B.Sc.):** Advanced Programming; Algorithm Design; Artificial Intelligence; Machine Learning; Computational Intelligence; Internet Engineering; Software Engineering
- Led full course delivery (syllabi, lectures, labs, exams, grading); introduced project-based evaluation in AI/ML

Instructor of Record & Teaching Assistant — Bu-Ali Sina University (Ph.D.)   *Hamedan, Iran*
                                                                  2012 – 2018

- **Instructor of Record:** Delivered selected undergraduate/graduate courses; created assignments and exams; managed grading and office hours
- **Teaching Assistant / Head TA:** Led recitations and labs; authored/graded assignments and exams; coordinated TA team; extended office-hour support

MENTORING & SUPERVISION

Mentoring & Supervision — Clemson University   *Clemson, SC*
Co-advisor to **2 Ph.D. students** (autonomous perception security; 3D CV)   2024–Present

- **Creative Inquiry (CI)** — Faculty Mentor, 2024–Present; *1–3 students each semester*
- **EUREKA! Honors Summer Research** — Faculty Mentor, Summer 2024; *1 student*
- **SPRI Honors Research Internships** — Faculty Mentor, Summer 2025; *1 student*

Mentoring & Supervision — Sirjan University of Technology   *Sirjan, Iran*
                                                                  2018–2023

- Supervisor of **6** M.Sc. theses (2018–2023)
- Supervisor of **30+** B.Sc. capstone projects (2018–2023)
- **Ph.D. co-advisor** for **1** student (2022–2023)

SERVICE & LEADERSHIP

- **University & Department Leadership**
    - **Department Chair**, Computer Science, Sirjan University of Technology | Mar. 2020–Dec. 2022
    - **Director**, International Academic Cooperation, Sirjan University of Technology | Jun. 2021–Apr. 2022

- **Conference & Event Leadership**
    - **Academic Chair**, National Conference of Ideas and Innovation in Business and Information Technology (NCIBIT) | 2019, 2021, 2022

- **Program Committees & Conference Reviewing**
    - ICRA: 2026
    - IEEE Intelligent Vehicles Symposium (IV): 2025, 2026
    - VehicleSec: 2025, 2026
    - AAAI: 2025
    - BMVC: 2025
    - ACM CCS: 2024
    - IEEE/RSJ IROS: 2023

- **Journal Peer Review**
  - Verified reviews (Web of Science): **117**
  - *Selected journals:* **IEEE Transactions on Information Forensics and Security**; IEEE Transactions on Image Processing; IEEE Transactions on Circuits and Systems for Video Technology; IEEE Transactions on Multimedia; IEEE Transactions on Automation Science and Engineering; **IEEE Transactions on Vehicular Technology**; IEEE Signal Processing Letters; IEEE Intelligent Systems; IEEE Computer Graphics and Applications; IEEE Transactions on Consumer Electronics; Digital Threats: Research and Practice; IET Image Processing; CAAI Transactions on Intelligence Technology; Science China Technological Sciences; Journal of Ambient Intelligence and Humanized Computing; Sensors; IEEE Access

- **Visiting Appointments & Research Schools**
  - Visiting Researcher — Federal University of Rio Grande do Sul (UFRGS), *Porto Alegre, Brazil |* Summer 2019
  - Research Visitor — University of Missouri, *Columbia, MO |* May 2015–Jan. 2016
  - Research Schools — NCSR Demokritos, *Athens, Greece |* Summers 2013 & 2014

- **Professional Memberships**
  - **IEEE** — Graduate Student Member
  - **IEEE Young Professionals**
  - **ACM** — Professional Member

Honors & Awards

- **Best Paper Award**, SAE/WCX   2025
- Ranked 1st among Ph.D. students, Bu-Ali Sina University   2018
- Top Student (Educational & Research), Bu-Ali Sina University   2014
- Ranked 2nd among M.Sc. CS students, Bu-Ali Sina University   2011
- Iran M.Sc. CE Entrance Exam — #300 of 10,000 nationwide   2007
- National skills/math competitions   1999–2003

Technical Skills

- **Languages:** Python, C/C++; MATLAB *(basic: Java, Rust, R)*
- **ML/DS:** PyTorch, scikit-learn, NumPy, pandas
- **CV/3D:** OpenCV, Open3D
- **Systems/Tools:** Linux, CUDA, Git, Docker, LaTeX
- **Domains:** AV perception & security; 3D vision & point clouds; adversarial ML; time-series analysis

Journal Articles

[9] Y. Mohammadi, **A. Salarpour**, and R. C. Leborgne, "Comprehensive strategy for classification of voltage sags source location using optimal feature selection applied to support vector machine and ensemble techniques", *International Journal of Electrical Power & Energy Systems*, vol. 124, p. 106 363, 2021.

[10] S. M. M. Peyghambarzadeh, F. Azizmalayeri, H. Khotanlou, and **A. Salarpour**, "Point-planenet: Plane kernel based convolutional neural network for point clouds analysis", *Digital Signal Processing*, vol. 98, p. 102 633, 2020.

[11] **A. Salarpour** and H. Khotanlou, "Direction-based similarity measure to trajectory clustering", *IET Signal Processing*, vol. 13, no. 1, pp. 70–76, 2019.

[12] **A. Salarpour**, H. Khotanlou, *et al.*, "Line-segment based trajectory similarity measure using time warping technique", *Tabriz Journal of Electrical Engineering*, vol. 49, no. 2, pp. 645–656, 2019.

[13] A Salarpour and H Khotanlou, "An empirical comparison of distance measures for multivariate time series clustering", *International Journal of Engineering*, vol. 31, no. 2, pp. 250–262, 2018.

[14] A. Fadaei, A. Gorbanpour, and **A. Salarpour**, "Optimizing parameters contributing to riveting quality using imperialist competitive algorithm and predicting objective function via three models mlr, rbf, and ann-ga.", *International Journal of Advanced Design & Manufacturing Technology*, vol. 9, no. 1, 2016.

[15] M. Aliabadi, R. Golmohammadi, H. Khotanlou, M. Mansoorizadeh, and **A. Salarpour**, "Artificial neural networks and advanced fuzzy techniques for predicting noise level in the industrial embroidery workrooms", *Applied Artificial Intelligence*, vol. 29, no. 8, pp. 766–785, 2015.

[16] **A. Salarpour**, E. Rahmatnejad, and H. Khotanlou, "Modelling broilers' abdominal fat in response to dietary treatments", *Journal of Animal Physiology and Animal Nutrition*, vol. 99, no. 2, pp. 237–243, 2015.

[17] M. Aliabadi, R. Golmohammadi, H. Khotanlou, M. Mansoorizadeh, and **A. Salarpour**, "Development of a noise prediction model based on advanced fuzzy approaches in typical industrial workrooms", *Journal of Research in Health Sciences*, vol. 14, no. 2, pp. 157–162, 2014.

[18] A. A. Saki, **A. Salarpour**, and E. Rahmatnejad, "Using soft computing to predict broilers' performance in response to herbal additives", *European Poultry Science*, vol. 78, pp. 1–8, 2014.

[19] **A. Salarpour**, A. Salarpour, M. Fathi, and M. H. Dezfoulian, "Vehicle tracking using kalman filter and features", *Signal & Image Processing: An International Journal*, vol. 2, no. 2, pp. 1–8, 2011.

Conference Papers

[20] M. Mohammadi, **A. Salarpour**, and P. MohajerAnsari, "Point-ln: A lightweight framework for efficient point cloud classification using non-parametric positional encoding", in *2025 29th International Computer Conference, Computer Society of Iran (CSICC)*, IEEE, 2025, pp. 1–7.

[21] F. Azizmalayeri, S. M. M. Peyghambarzadeh, H. Khotanlou, and **A. Salarpour**, "Kernel correlation based cnn for point cloud classification task", in *2018 8th International Conference on Computer and Knowledge Engineering (ICCKE)*, IEEE, 2018, pp. 200–204.

[22] **A. Salarpour**, H. Khotanlou, M. A. Mahboubi, and S. Daghigh, "A multiresolution approach to trajectory description", in *2017 3rd International Conference on Pattern Recognition and Image Analysis (IPRIA)*, IEEE, 2017, pp. 62–68.

[23] **A. Salarpour**, H. Khotanlou, and N. Mavridis, "Long-term estimation of human spatial interactions through multiple laser ranging sensors", in *2014 International Conference on Robotics and Emerging Allied Technologies in Engineering (iCREATE)*, IEEE, 2014, pp. 109–114.

Book Chapters

[24] **A. Salarpour**, A. Domeke, P. MohajerAnsari, D. Fernandez, C. Kokenoz, and M. D. Pesé, "Trustworthy ai for cps security", in *Artificial Intelligence for Cyberphysical Systems Security and Resilience: Theory and Applications in Smart Environments*, H. Amini, S. Uluagac, K. Akkaya, and M. Chowdhury, Eds., Accepted book chapter; to appear, Springer, 2026.

[25] R. Wang, C. Zhou, **A. Salarpour**, X. Liu, Z.-Q. Cheng, F. Luo, M. D. Pesé, and S. Huang, "Flexmap: Generalized hd map construction from flexible camera configurations", Under review (submitted to ICML 2026), 2026. arXiv: 2601.22376.

[26] P. Bauerfeind, **A. Salarpour**, D. Fernandez, P. MohajerAnsari, J. Reschke, and M. D. Pesé, "David vs. goliath: A comparative study of different-sized llms for code generation in the domain of automotive scenario generation", *arXiv*, 2025. arXiv: 2510.14115.

[27] M. Saeid, **A. Salarpour**, and P. MohajerAnsari, "Enhancing 3d point cloud classification with modelnet-r and point-skipnet", *arXiv*, 2025. arXiv: 2509.05198.

[28] P. MohajerAnsari, **A. Salarpour**, J. De Voor, A. Domeke, A. Mitra, G. Johnson, H. Olufowobi, M. Hamad, and M. D. Pesé, "Discovering new shadow patterns for black-box attacks on lane detection of autonomous vehicles", *arXiv*, 2024. arXiv: 2409.18248.