

Javad Amirian

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Postdoctoral Researcher @ Sorbonne Universite (ISIR/UPMC) (Paris)— Sep. 2023 - Present
Working on Social Robot Navigation using Computer Vision and Large Language Models (LLMs) as part of the euROBIN project.

CTO and Head of AI @ Vive Robotics (Remote - Toronto)— Jul. 2021 - Aug. 2023
Led the development of the Vive Tennis Robot, overseeing AI and computer vision algorithms for navigation, ball detection, and player identification. Guided the AI team to create a high-fps embedded video processing pipeline.

Co-Founder @ DecorAR (Inria Startup Studio) (Parttime, Paris)— Apr. 2022 - Mar. 2023
Developed AI and Visual Recommendation for Augmented Reality environments. Built ML models and developed the tech stack for the platform "Interior Design by AI."

Doctoral Researcher @ Inria (EU H2020 Project) (Rennes)— Jan. 2018 - Jul. 2021
Developed the "Social-Ways" model using GANs for human motion trajectory prediction in crowded environments. Gained expertise in deep learning frameworks and large-scale data analysis.

Computer Vision Engineer @ PixBall (formerly Sepehr) (Tehran)— May 2015 - Dec. 2017
Developed image processing and machine vision algorithms for sports video analysis. Contributed to PixArt for embedding graphical overlays and virtual advertisements into sports content.

Education

- **PhD in Computer Science (Robotics and AI)** Jan. 2018 - Jul 2021
Inria Rennes (Rainbow Team), France
Thesis: Human Motion Trajectory Prediction for Robot Navigation (CrowdBot)
Supervisors: Dr. Julien Pettré , Dr. Jean-Bernard Hayet
* Lab's nominated for the Best Thesis Award in Robotics
- **MSc in Computer Engineering (Artificial Intelligence)** Sept. 2012 - Sept. 2014
Sharif University of Technology, Tehran, Iran (1st Rank Technical School in Iran)
Thesis: Dynamic Motion Planning and Obstacle Avoidance for Simulated Autonomous Car in Webots
Supervisor: Dr. Mansour Jamzad
- **BSc in Electrical Engineering (Electronics)** Sept. 2007 - Sept. 2012
Shahid Beheshti University (National University of Iran), Tehran, Iran

Selected Publications

- **Amirian, J., Abrini, M., Chetouani, M., "Legibot: Generating Legible Motions for Service Robots Using Cost-Based Local Planners," (RO-MAN-2024).**
- **Gheisari, M., Amirian, J., Furon, T. Amsaleg, L., "AggNet: Learning to Aggregate Faces for Group Membership Verification," (Preprint-2022).**
- **Zhang, B., Amirian, J. Eberle, H., Pettré, J., Holloway, C., Carlson , T. "Towards Safe Human-Robot Interactions in Crowds: Empirical Study of Pedestrian Dynamics with a Wheelchair and a Pepper Robot." International Journal of Social Robotics (SORO-2022).**
- **Amirian, J., Hayet, J. B., Pettré, J., "What we see and What we don't see: Imputing Occluded Crowd Structures from Robot Sensing," (Preprint-2021).**

- **Amirian, J.**, Zhang, B., Valente Castro, F., Baldelomar, J., Hayet, J. B., Pettré, J. "**OpenTraj: Assessing Prediction Complexity in Human Trajectories Datasets.**" In Proceedings of the 15th Asian Conference on Computer Vision (**ACCV-2020**), Nov-Dec. 2020.
- van Toll, W., Grzeskowiak, F., Gandía, A.L., **Amirian, J.**, Berton, F., Bruneau, J., Daniel, B.C., Jovane, A. and Pettré, J., "**Generalized Microscopic Crowd Simulation using Costs in Velocity Space,**", In Symposium on Interactive 3D Graphics and Games (**I3D-2020**), May 2020.
- **Amirian, J.**, Van Toll, W., Hayet, J. B., Pettré, J. "**Data-Driven Crowd Simulation with Generative Adversarial Networks.**" In Proceedings of the 32nd International Conference on Computer Animation and Social Agents (**CASA'19**), Jul. 2019.
- **Amirian, J.**, Hayet, J. B., Pettré, J., "**Social ways: Learning multi-modal distributions of pedestrian trajectories with GANs,**" IEEE Conference on Computer Vision and Pattern Recognition (**CVPR-2019**) Precognition Workshop, Jul. 2019.
- **Amiryan, J.**, Jamzad, M., "**Adaptive motion planning with artificial potential fields using a prior path,**" 3rd RSI International Conference on Robotics and Mechatronics (**ICROM**), 2015.

Technical Skills

Programming Languages: Python, C/C++, Matlab, Swift

Deep Learning: Pytorch, Keras (TensorFlow) — RNNs, GANs, CNNs

Version Control: Git, GitHub

AI and Robotics Tools: OpenCV, Nvidia Jetson, ROS, CARLA, Webots, Unity, Gazebo

Software Development: OOD, Concurrent and Multithread, Modular Programming

References

- **Dr. Mohamed Chetouani**
Full Professor and Deputy Director at ISIR, Sorbonne University, Paris, France
Email: mohamed.chetouani@isir.upmc.f
- **Dr. Julien Pettre**
Research Scientist at Rainbow, Inria, Brittany, France
Email: julien.pettre@inria.fr
- **Dr. Jean-Bernard Hayet**
Researcher at CIMAT, Department of Computer Science., Guanajuato, Mexico
Email: jbhayet@cimat.mx