





# Niyati Rawal

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🐦 @RawalNiyati

🌐 <https://niyatirawal.github.io>

## Employment History




- 11/2021 – 10/2024  **Early Stage Researcher (MSCA PERSEO).** University of Modena and Reggio Emilia, Modena, ITALY.  
Worked on Vision and Language Navigation and Multimodal Embodied Dialogue  
- Visiting PGR student at University of Manchester, UNITED KINGDOM  
- Visiting researcher at University of Freiburg, GERMANY
- 06/2020 – 10/2021  **Assistant Researcher.** Technical University of Darmstadt, Darmstadt, GERMANY.  
Worked on facial expressions in Human-Robot Interaction
- 05/2019 – 09/2019  **Intern.** Inria, Nancy, FRANCE.  
Compared Markovian models for human activity recognition and prediction
- 10/2017 – 03/2018  **Trainee.** NICT, Osaka, JAPAN.  
Implemented RNN for explaining the development of visual attention to faces in infancy

## Education

- 11/2021 – 10/2024  **Ph.D., Information and Communications Technology,** University of Modena and Reggio Emilia, Modena, ITALY  
Thesis title: *Integration of Vision and Language for Physical and Cognitive Human-Robot Interaction.*
- 10/2018 – 09/2019  **Master's degree in Computational Engineering and Mathematics,** University of Rovira I Virgili, Tarragona, SPAIN  
Thesis title: *Top-down approach to compare the moral theories of Deontology and Utilitarianism in Pac-Man game setting.*
- 04/2014 – 03/2018  **B.E. Mechanical Engineering,** Osaka University, Osaka, JAPAN  
Thesis title: *The role of featural and configural processing in the development of visual attention.*
- 04/2013 – 03/2014  **Japanese Language Course,** Tokyo University of Foreign Studies, Tokyo, JAPAN
- 04/2009 – 03/2012  **High School,** Convent of Jesus and Mary, New Delhi, INDIA

## Research Publications

### Journal Articles

- 1 N. Rawal, R. Bigazzi, L. Baraldi, and R. Cucchiara, "Unmute: Unifying Navigation and Multimodal Dialogue-Like Text Generation," *Submitted to CVIU*,  URL: <https://arxiv.org/abs/2408.04423>.
- 2 N. Rawal, D. Koert, C. Turan, K. Kersting, J. Peters, and R. Stock-Homburg, "ExGenNet: Learning to Generate Robotic Facial Expression Using Facial Expression Recognition," *Frontiers in Robotics and AI*, vol. 8, p. 730 317, 2022.  URL: <https://www.frontiersin.org/articles/10.3389/frobt.2021.730317/full>.
- 3 N. Rawal and R. M. Stock-Homburg, "Facial emotion expressions in human-robot interaction: A survey," *International Journal of Social Robotics*, vol. 14, no. 7, pp. 1583–1604, 2022.  URL: <https://link.springer.com/article/10.1007/s12369-022-00867-0>.

### Conference Proceedings

- 1 N. Rawal, R. S. Maharjan, G. Salici, *et al.*, "Multimodal Dialogue for Empathetic Human-Robot Interaction," in *Submitted to ICSR*.
- 2 R. S. Maharjan, N. Rawal, M. Romeo, L. Baraldi, R. Cucchiara, and A. Cangelosi, "Multimodal Emotion Recognition in Conversation via Possible Speaker's Audio and Visual Sequence Selection," in *Proceedings of the 2025 IEEE International Conference on Acoustics, Speech and Signal Processing*, 2025.
- 3 N. Rawal, L. Baraldi, and R. Cucchiara, "AIGeN-Llama: An Adversarial Approach for Instruction Generation in VLN using Llamaz Model," in *Proceedings of the 21st Conference on Information and Research Science Connecting to Digital and Library Science*, 2025.
- 4 N. Rawal, R. Bigazzi, L. Baraldi, and R. Cucchiara, "AIGeN: An Adversarial Approach for Instruction Generation in VLN," in *Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition Workshop*, 2024, pp. 2070–2080.
- 5 N. Rawal, R. S. Maharjan, M. Romeo, *et al.*, "Intelligent Multimodal Artificial Agents that Talk and Express Emotions," in *Springer Proceedings in Advanced Robotics*, 2024.
- 6 S. Poppi, R. Bigazzi, N. Rawal, *et al.*, "Towards Explainable Navigation and Recounting," in *Proceedings of the 22nd International Conference on Image Analysis and Processing*, **Honorable Mention ICIAP Best Paper Award**, 2023. [URL: https://link.springer.com/chapter/10.1007/978-3-031-43148-7\\_15](https://link.springer.com/chapter/10.1007/978-3-031-43148-7_15).

## Skills

Languages	📖 Hindi, English, Japanese, Italian
Coding	📖 Python, C/C++, Java, Matlab
Misc.	📖 Academic research, Computer Vision, Natural Language Processing, Robotics

## Miscellaneous Experience

### Awards and Achievements

2021	📖 Marie Skłodowska-Curie Actions Fellowship - PERSEO Project: Received a three year fellowship to pursue my doctoral degree in Europe
2017	📖 RoboCup Japan Open: A robot soccer league where the robots operate autonomously, our team JoiTech won the first prize
2013	📖 Monbukagakusho (MEXT) Scholarship: Received a five year scholarship by the Japanese Government to pursue my bachelor degree in Japan
2010	📖 CJM PTA Scholarship for consistent effort
2009	📖 CJM PTA Scholarship for consistent effort

### Certification




2014	📖 <b>Certificate in Japanese Language.</b> Awarded by Tokyo University of Foreign Studies.
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## Exchange Periods

2024	📖 PERSEO Secondment at Cognitive Robotics Lab (CoRoLab), University of Manchester, United Kingdom
	📖 Research Exchange at Robot Learning Lab, University of Freiburg, Germany
	📖 PERSEO Secondment at Omitech SRL, Italy

## Schools Attended

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- 2021  PERSEO Winter School on Ethics and Interdisciplinary Research Methods for Personalized Robotics, Amsterdam, Netherlands (Remote)
- 2022  5th Advanced Online and Onsite Course on Data Science and Machine Learning, Siena, Italy
-  PERSEO Summer School on Service-Based and Cloud Robotics, Palma de Majorca, Spain

## Conferences and Workshops Attended

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- 2021  PERSEO First Residential Workshop, Pisa, Italy
- 2022  PERSEO Second Residential Workshop, Barcelona, Spain
-  31st IEEE International Conference on Robot & Human Interactive Communication (RO-MAN), 2022, Naples, Italy
- 2023  PERSEO Third Residential Workshop, Modena, Italy
-  ACM/IEEE International Conference on Human-Robot Interaction (HRI), 2023, Stockholm, Sweden
-  PERSEO Fourth Residential Workshop, Vienna, Austria
- 2024  PERSEO Fifth Residential Workshop, Munich, Germany
-  17th International Workshop on Human-Friendly Robotics (HFR), 2024, Lugano, Switzerland