MATTIA RACCA

Research Scientist – Human-Robot Interaction

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CURRENT POSITION

Research Scientist

NAVER LABS Europe

September 2022 – ongoing Grenoble, FRANCE

Social Robot Navigation, with the HRI and Spatial AI teams.

Notable milestones:
2025 Promotion to Research Scientist lvl. 2
2025 PhD supervisor of DC7 for the Marie Skłodowska-Curie Industrial Doctoral Network "Social Awareness for Service Robots" (SWEET)

PAST POSITIONS

Postdoctoral Researcher

Idiap Research Institute

October 2020 – June 2022 Martigny, SWITZERLAND

End-User Programming as front-end for Robot Optimal Control.
Supervisors: Dr. Sylvain Calinon and Dr. Jean-Marc Odobez

Doctoral Studies

Aalto University, Intelligent Robotics Group

January 2016 – September 2020 Helsinki, FINLAND

- **Robot Learning and Human-Robot Interaction**, supervised by Professor Ville Kyrki.
- **3 first-author papers** at **HRI conferences** (2018, 2019, 2020).
- **Teaching assistant** for the Robotic Vision course (2016-18), taught by Professor Ville Kyrki.
- **Master's thesis advisor** on the following topics:
  - From Demonstrations to End-User Programming
  - Robot Policy Situated Generation of Explanations
  - 3D Object Reconstruction via Robot Hand-held Camera
  - Human Gaze-driven Attention Maps on RGB-D Cameras
- **Research visit** at **University of Washington**
  February 2019 – June 2019 Seattle (WA), USA
  Supervised by Professor Maya Cakmak, work at the intersection of Active Learning and End-User Robot Programming.
- **Internship** at **Fraunhofer IPA, Care-O-bot Lab**
  June 2017 – July 2017 Stuttgart, GERMANY
  Training as robot administrator for the Care-O-bot 4, with a focus on ROS Open Source Software Development.

EDUCATION

Doctor of Science (Technology)

Aalto University

2016 – 2020 Helsinki, FINLAND

Dissertation's title: Teacher-Learner Interaction for Robot Active Learning
Supervisor: Professor Ville Kyrki
Opponent: Professor Tony Belpaeme

M.Sc. in Computer Engineering

Politecnico di Torino

2013 – 2015 Turin, ITALY

Major: Automation and Control Theory
Final grade: 110 / 110 *cum laude*

B.Sc. in Computer Engineering

Politecnico di Torino

2010 – 2013 Turin, ITALY

Final grade: 109 / 110

TECHNICAL SKILLS

Programming: Python, C++, bash
SW Engineering: Linux, git, Docker
Robotics: ROS 2, NAV2 stack, Traditional Computer Vision, ROS 1
Machine Learning: Active Learning, Mixture Models, U-Net
Human-Robot Interaction: User Study, Statistical Analysis
Writing and Editing: LaTeX, TikZ, Notion, Inkscape, GIMP

SELECTED PUBLICATIONS

- **M. Racca**, J. Willamowski, et al. (2025). "Robots Waiting for the Elevator: Integrating Social Norms in a Low-Data Regime Goal Selection Problem". In: *2025 IEEE International Conference on Robot & Human Interactive Communication (RO-MAN)*. IEEE.
- J. Jankowski, **M. Racca**, and S. Calinon (2022). "From Key Positions to Optimal Basis Functions for Probabilistic Adaptive Control". In: *Robotics and Automation Letters (RA-L) and ICRA*.
- M. Axelsson, R. Oliveira, et al. (2021). "Social Robot Co-Design Canvases: A Participatory Design Framework". In: *J. Human-Robot Interaction* 11.1.
- **M. Racca**, V. Kyrki, and M. Cakmak (2020). "Interactive Tuning of Robot Program Parameters via Expected Divergence Maximization". In: *2020 ACM/IEEE International Conference on Human-Robot Interaction (HRI)*. ACM.
- **M. Racca**, A. Oulasvirta, and V. Kyrki (2019). "Teacher-Aware Active Robot Learning". In: *2019 ACM/IEEE International Conference on Human-Robot Interaction (HRI)*. IEEE.
- **M. Racca** and V. Kyrki (2018). "Active Robot Learning for Temporal Task Models". In: *2018 ACM/IEEE International Conference on Human-Robot Interaction (HRI)*. ACM.

Complete list and preprints available at mattiaracca.github.io/publications/.

COMMUNITY DUTIES

2025 Area Chair (Technical Track) for HRI 2026.
2024 Organizer of the 2nd International HRI Symposium, hosted by NAVER LABS Europe.
2024 Program Committee member for the 27th European Conference on Artificial Intelligence (ECAI).
2024 Main organizer of the 3rd Human Interactive Robot Learning Workshop, held at HRI 2024.

ROBOTIC PLATFORMS

Rookie — *from NAVER LABS*

NAVER LABS Autonomous Service Robot, the platform of choice for our social navigation research.

FRANKA RESEARCH — *from FRANKA Robotics*

I implemented an end-user programming framework in ROS 1, C++, and Python to showcase our active parameter tuning approach.

Care-O-bot 4 — *from Fraunhofer IPA & 4am Robotics*

I was the administrator of Aalto University's *Rosie*, maintaining an internal manual, instructing new users, and performing routine check-ups.

GRANTS & AWARDS

"SWEET" MSCA DN-ID project

September 2025 — European Union

Marie Skłodowska-Curie Industrial Doctoral Network (DN-ID) project, where I co-supervise a PhD student.

Nomination "Best Doctoral Dissertation in the Field of Technology" in Finland in 2020

January 2021 — TEK & TFiF

Travel Grant from Ernst Wirtzen's fund

December 2018 — Ernst Wirtzen's fund

Funds (4000 €) for the research visit at the University of Washington.

Aalto ELEC Doctoral School scholarship

May 2017 — Aalto University

Funds covering my salary for 2 years and 9 months of my doctoral studies.

LANGUAGE SKILLS

Italian ●●●●● **English** ●●●●●
French ●●●○○ **German** ●○○○○

HOBBIES & INTERESTS

Hiking & Running · Climbing · Ancient History · Game Design

REFERENCES

Professor Ville Kyrki – PhD supervisor
Aalto University
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More references available upon request.

Updated on 17/09/2025