

# Simone Angarano

PHD STUDENT · MACHINE LEARNING FOR ROBOTICS

*Politecnico di Torino, Turin, Italy*  
*Interdepartmental Center for Service Robotics (PIC4SeR)*

✉ Mail | 📄 Scholar | 🏠 Website | 🐙 GitHub

## Education

---

### PhD in Electrical, Electronics, and Communications Engineering

POLITECNICO DI TORINO - INTERDEPARTMENTAL CENTER FOR SERVICE ROBOTICS (PIC4SeR)

*Turin, Italy*

*11/2021 - present*

- Project: Efficient Deep Learning models for Robot perception, control, and decision-making.
- Advisor: Prof. Marcello Chiaberge.

### MS in Mechatronic Engineering (110/110 with honors)

POLITECNICO DI TORINO

*Turin, Italy*

*10/2018 - 10/2020*

- Thesis: Deep Learning Methodologies for Ultra-Wideband Ranging Error Compensation.
- Advisor: Prof. Marcello Chiaberge.

### BS in Electronic Engineering (103/110)

POLITECNICO DI TORINO

*Turin, Italy*

*10/2015 - 10/2018*

- Final Project: FPGA Implementation of an End-to-end Digital Filter.
- Advisor: Prof. Maurizio Zamboni.

## Research Experience

---

### Research Fellow

POLITECNICO DI TORINO - INTERDEPARTMENTAL CENTER FOR SERVICE ROBOTICS (PIC4SeR)

*Turin, Italy*

*11/2020 - 10/2021*

- Project: Machine Learning for robot perception and navigation.
- Advisor: Prof. Marcello Chiaberge.

## Publications

---

### PUBLISHED

Mazzia, V., **Angarano, S.**, Salvetti, F., Angelini, F., & Chiaberge, M. (2022). Action Transformer: A Self-attention Model for Short-time Pose-based Human Action Recognition. *Pattern Recognition*, 124, 108487.

**Angarano, S.**, Salvetti, F., Mazzia, V., Fantin, G., Gandini, D., & Chiaberge, M. (2022). Ultra-Low-Power Range Error Mitigation for Ultra-Wideband Precise Localization. In *Science and Information Conference* (pp. 814-824). Springer, Cham.

**Angarano, S.**, Mazzia, V., Salvetti, F., Fantin, G., & Chiaberge, M. (2021). Robust ultra-wideband range error mitigation with deep learning at the edge. *Engineering Applications of Artificial Intelligence*, 102, 104278.

Martini, M., Cerrato, S., Salvetti, F., **Angarano, S.**, & Chiaberge, M. (2022). Position-Agnostic Autonomous Navigation in Vineyards with Deep Reinforcement Learning. In *2022 IEEE 18th International Conference on Automation Science and Engineering (CASE)* (pp. 477-484). IEEE.

### ACCEPTED

Salvetti, F., **Angarano, S.**, Martini, M., Cerrato, S., & Chiaberge, M. (2022). Waypoint Generation in Row-based Crops with Deep Learning and Contrastive Clustering. *arXiv preprint arXiv:2206.11623*. Accepted at ECML PKDD 2022

### UNDER REVIEW

**Angarano, S.**, Salvetti, F., Martini, M., & Chiaberge, M. (2022). Generative Adversarial Super-Resolution at the Edge with Knowledge Distillation. *arXiv preprint arXiv:2209.03355*.

**Angarano, S.**, Martini, M., Salvetti, F., Mazzia, V., & Chiaberge, M. (2022). Back-to-Bones: Rediscovering the Role of Backbones in Domain Generalization. *arXiv preprint arXiv:2209.01121*.

Marchionna, L., Pugliese, G., Martini, M., **Angarano, S.**, Salvetti, F., & Chiaberge, M. (2022). Deep Instance Segmentation and Visual Servoing to Play Jenga with a Cost-Effective Robotic System. arXiv preprint arXiv:2211.07977.

## Presentations

---

### CONFERENCES

**ECML PKDD**, 2022. Poster presentation “Waypoint Generation in Row-based Crops with Deep Learning and Contrastive Clustering”. Grenoble, France.

**SAI Computing Conference**, 2022. Oral presentation “Ultra-Low-Power Range Error Mitigation for Ultra-Wideband Precise Localization”. London, UK.

**IRIM Conference**, 2021. Poster presentation “Local Planners with Deep Reinforcement Learning for Indoor Autonomous Navigation”. Rome, Italy.

### OTHER EVENTS

**PhD Poster Day**, 2022. Poster presentation “Efficient Deep Learning models for Robot perception, control, and decision-making”. Turin, Italy.

**Data, AI, and Robotics @PoliTo**, 2021. Poster presentation “AI@PIC4SeR”. Turin, Italy.

## Teaching Experience

---

### ACADEMIC

2022-2023	<b>Laboratory Teaching Assistant</b> , Electronics Fundamentals and Applications.	<i>Politecnico di Torino</i>
2022	<b>Examinator</b> , Electronic Systems for Mechatronics.	<i>Politecnico di Torino</i>
2022	<b>Laboratory Teaching Assistant</b> , Electronic Systems for Mechatronics.	<i>Politecnico di Torino</i>
2017-2020	<b>Teacher</b> , Linear Algebra and Geometry Tutoring Course.	<i>Politecnico di Torino</i>
2016-2019	<b>Teacher</b> , Calculus Tutoring Course.	<i>Politecnico di Torino</i>

### COMPANY

2022	<b>Teacher</b> , Machine Learning 101.	<i>2+ Consulting</i>
2022	<b>Teacher</b> , Machine Learning 101.	<i>4Marketing</i>

## Mentoring

---

2022	<b>Bee Detection and Counting with Deep Learning at the Edge</b> , MS Thesis Tutor.	<i>PIC4SeR</i>
2022	<b>Learning Odometric Error in Mobile Robots with Deep Learning</b> , MS Thesis Tutor.	<i>PIC4SeR</i>
2022	<b>Running Analysis with Multivariate Timeseries Regression</b> , MS Thesis Tutor.	<i>PIC4SeR</i>
2022	<b>Hand Gesture Recognition for Robotic Domestic Assistant</b> , MS Thesis Tutor.	<i>PIC4SeR</i>
2022	<b>Vineyard Segmentation with Deep Learning for 4.0 Agriculture</b> , MS Thesis Tutor.	<i>PIC4SeR</i>
2021	<b>Indoor Navigation with Low-power Vocal Assistant at the Edge</b> , MS Thesis Tutor.	<i>PIC4SeR</i>
2021	<b>Visual and Tactile Perception to Play Jenga with a Robotic Arm</b> , MS Thesis Tutor.	<i>PIC4SeR</i>
2021	<b>Face Recognition with Deep Learning for Service Robotics</b> , MS Thesis Tutor.	<i>PIC4SeR</i>
2021	<b>Deep Computer Vision at the Edge for Apple Counting</b> , MS Thesis Tutor.	<i>PIC4SeR</i>
2021	<b>Semantic Scene Segmentation for Indoor Robot Navigation</b> , MS Thesis Tutor.	<i>PIC4SeR</i>

## Grants

---

2020-2021	<b>Graduate Research Fellow Grant</b> , Politecnico di Torino.	<i>€ 18,000</i>
2016-2020	<b>Tuition Fees Refund for Academic Merit</b> , Politecnico di Torino.	<i>€ 1,000</i>
2014-2015	<b>“SuperMedia” Scholarship</b> , Italian National Social Security Institute.	<i>€ 2,200</i>

## Additional Activities

---

### INSTITUTIONAL ROLES

2021-2022	<b>Department of Electronics and Telecommunications Council</b> , <i>PhD Representative.</i>	<i>Politecnico di Torino</i>
2019-2020	<b>Department of Electronics and Telecommunications Council</b> , <i>Student Representative.</i>	<i>Politecnico di Torino</i>
2019-2020	<b>Consortium of Leading Universities of Science and Technology for Education and Research (CLUSTER)</b> , <i>Representative for Politecnico di Torino.</i>	<i>European Union</i>
2017-2019	<b>Academic Senate</b> , <i>Student Representative.</i>	<i>Politecnico di Torino</i>

### VOLUNTEER WORK

2015-2020	<b>Lavori in Corso Student Association</b> , <i>Board Member.</i> Student representation, Welcoming and study help for freshmen, Cultural events, Social media management.	<i>Politecnico di Torino</i>
2015-2022	<b>Il Cammino Association</b> , <i>Volunteer.</i> Helping kids at risk of exclusion with their homework.	<i>Turin, Italy</i>
2014-2022	<b>Meeting for Friendship amongst Peoples Foundation</b> , <i>Volunteer.</i> Electrician, Catering assistant, Surveillant.	<i>Rimini, Italy</i>
2008-2022	<b>Banco Alimentare Foundation</b> , <i>Volunteer.</i> Recovery of surplus food in favor of charity organizations.	<i>Italy</i>