

Sarah Gillet

POSTDOCTORAL RESEARCHER · HUMAN-ROBOT INTERACTION

KTH, Royal Institute of Technology, School of Electrical Engineering and Computer Science,
Division of Robotics, Perception and Learning, Lindstedtsvägen 24, 4th floor, 11428 Stockholm, Sweden

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My research investigates how robots can support people and the interactions between them focusing on which methods or algorithms could be used to enable autonomy that can effect real people.

Employment

KTH, Royal Institute of Technology

POSTDOCTORAL RESEARCHER

- Advisor: Prof Iolanda Leite and Prof Hedvig Kjellström

Stockholm, Sweden

09/2024 – PRESENT

Corporate Research, KUKA Robotics

SOFTWARE DEVELOPER FOR MOBILE ROBOTICS

- Research projects:
 - RobDream and REFILLS projects funded under Horizon 2020 of the European Union
 - Hybr-IT funded by the German Federal Ministry of Education and Research (BMBF)

Augsburg, Germany

07/2015 – 08/2018

Education

KTH, Royal Institute of Technology

PH.D. IN COMPUTER SCIENCE

- Thesis title: Computational Approaches to Interaction-Shaping Robotics
- Supervisors: Prof Iolanda Leite and Prof Hedvig Kjellström

Stockholm, Sweden

09/2018 – 09/2024

Yale University

VISITING ASSISTANT IN RESEARCH

- Advisor: Marynel Vázquez

New Haven, USA

10/2021 – 05/2022

TU Dortmund

BSC & MSc IN COMPUTER SCIENCE, MINOR: ROBOTICS

Dortmund, Germany

10/2009 – 05/2015

Scholarship & Awards

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|----------------|---|------------------------------|
| 2024 | RSS Pioneers , Selected to participate in the Robotics: Science and Systems (RSS) Pioneers, a highly selective workshop (15% acceptance rate) that brings together a cohort of the world's top early-career researchers. | Delft, Netherlands |
| 2023 | Outstanding reviewer recognition , ACM/IEEE International Conference on Human-Robot Interaction (HRI) | Stockholm |
| 2022 | DAAD Alnet fellow , Selected to participate in the DAAD Postdoc-NeT-AI 3/2022 – AI and Robotics | |
| 2021 | Best User Studies Paper Award , The 16th ACM/IEEE International Conference on Human-Robot Interaction | Boulder, Co, USA |
| 2021 | HRI Pioneers , Selected to participate in the Human-Robot Interaction (HRI) Pioneers, a highly selective workshop to foster creativity, communication and collaboration between young researchers. | Boulder, Co, USA |
| 2020 | Best Late Breaking Report Award, Honorable Mentions , The 15th ACM/IEEE International Conference on Human-Robot Interaction | Cambridge, United Kingdom |
| 2016 | Hans-Uhde Award for an excellent master thesis in engineering sciences, Hans-Uhde Foundation , (Original title: Hans-Uhde-Preis für herausragende Abschlussarbeiten in den Ingenieurwissenschaften) | Dortmund, Germany |
| 2013 | 2013 Best Graduation Award, TU Dortmund , (Original title: "Jahrgangsbestenpreis 2013 der Gesellschaft der Freunde der Technischen Universität Dortmund e.V. auf Vorschlag der Fakultät für Informatik") | Dortmund, Germany |
| 2012 – 2014 | Scholarship , German National Academic Foundation | |
| 2010 – 2012 | Scholarship , Industry-supported scholarship awarded yearly by the department of computer science (NRW Stipendium, Deutschlandstipendium) | |

Awarded Grants

- 2024 **Travel grant**, Karl Engvers foundation, providing 24000SEK (~2400\$) to attend HRI 2024
- 2022 **Travel grant**, Signeuls stiftelse, providing 25000SEK (~2500\$) to attend CORL 2022
- 2022 **Travel grant**, Signeuls stiftelse, providing 12600SEK (~1500\$) to attend RO-MAN 2022

Publications

PH.D. THESIS

Sarah Gillet (2024). “Computational Approaches to Interaction-Shaping Robotics”. PhD thesis. KTH Royal Institute of Technology.

BOOK CHAPTERS

B-1: Multiparty Interaction Between Humans and Socially Interactive Agents

Sarah Gillet, Marynel Vázquez, Christopher Peters, Fangkai Yang, Iolanda Leite

The Handbook on Socially Interactive Agents: 20 Years of Research on Embodied Conversational Agents, Intelligent Virtual Agents, and Social Robotics Volume

2: Interactivity, Platforms, Application, 2022, New York, NY, USA

JOURNAL ARTICLES (PEER-REVIEWED)

J-4: RoSI: A Model for Predicting Robot Social Influence

Hadas Erel, Marynel Vázquez, Sarah Sebo, Nicole Salomons, **Sarah Gillet**, Brian Scassellati

J. Hum.-Robot Interact. Association for Computing Machinery, 2024

J-3: Interaction-Shaping Robotics: Robots that Influence Interactions between Other Agents

Sarah Gillet, Marynel Vázquez, Sean Andrist, Iolanda Leite, Sarah Sebo

J. Hum.-Robot Interact. Association for Computing Machinery, 2024

J-2: Robot-Mediated Inclusive Processes in Groups of Children: From Gaze Aversion to Mutual Smiling Gaze

Sylvaine Tuncer, **Sarah Gillet**, Iolanda Leite

Frontiers in Robotics and AI 9. 2022

J-1: The impact of adding perspective-taking to spatial referencing during human-robot interaction

Fethiye Irmak Doğan, **Sarah Gillet**, Elizabeth J. Carter, Iolanda Leite

Robotics and Autonomous Systems 134 p. 103654. 2020

CONFERENCE PROCEEDINGS (PEER-REVIEWED)

C-12: Shielding for socially appropriate robot listening behaviors

Sarah Gillet, Daniel Marta, Mohammed Akif, Iolanda Leite

2024 33rd IEEE International Conference on Robot and Human Interactive Communication (RO-MAN), 2024

C-11: Let's move on: Topic Change in Robot-Facilitated Group Discussions

Georgios Hadjiantonis, **Sarah Gillet**, Marynel Vázquez, Iolanda Leite, Fethiye Irmak Doğan

2024 33rd IEEE International Conference on Robot and Human Interactive Communication (RO-MAN), 2024

C-10: Verbally Soliciting Human Feedback in Continuous Human-Robot Collaboration: Effects of the Framing and Timing of Reminders

Kate Candon, Helen Zhou, **Sarah Gillet**, Marynel Vázquez

[Acceptance Rate: 25%]

Proceedings of the 2023 ACM/IEEE International Conference on Human-Robot Interaction, 2023, New York, NY, USA

C-9: Robot Duck Debugging: Can Attentive Listening Improve Problem Solving?

Maria Teresa Parreira, **Sarah Gillet**, Iolanda Leite

Proceedings of the 25th International Conference on Multimodal Interaction, 2023, Paris, France

C-8: How Did We Miss This? A Case Study on Unintended Biases in Robot Social Behavior

Maria Teresa Parreira, **Sarah Gillet**, Katie Winkle, Iolanda Leite

[Acceptance Rate: 18%]

Companion of the 2023 ACM/IEEE International Conference on Human-Robot Interaction, 2023, New York, NY, USA

C-7: Learning Gaze Behaviors for Balancing Participation in Group Human-Robot Interactions

Sarah Gillet, Maria Teresa Parreira, Marynel Vázquez, Iolanda Leite

[Acceptance Rate: 22%]

Proceedings of the 2022 ACM/IEEE International Conference on Human-Robot Interaction, 2022, Sapporo, Hokkaido, Japan

C-6: Ice-Breakers, Turn-Takers and Fun-Makers: Exploring Robots for Groups with Teenagers

Sarah Gillet, Katie Winkle, Giulia Belgiovine, Iolanda Leite

2022 31st IEEE International Conference on Robot and Human Interactive Communication (RO-MAN), 2022

C-5: Autonomous Robot Behaviors for Shaping Group Dynamics

Sarah Gillet

[Acceptance Rate: 38%]

Companion of the 2021 ACM/IEEE International Conference on Human-Robot Interaction, 2021, Boulder, CO, USA

C-4: Robot Gaze Can Mediate Participation Imbalance in Groups with Different Skill Levels

Sarah Gillet*, Ronald Cumbal*, André Pereira, José Lopes, Olov Engwall, Iolanda Leite

[Best Paper Award][Acceptance Rate: 23%]

Proceedings of the 2021 ACM/IEEE International Conference on Human-Robot Interaction, 2021, New York, NY, USA

- C-3: A Robot Mediated Music Mixing Activity for Promoting Collaboration among Children
Sarah Gillet, Iolanda Leite
 [Best Late Breaking Report, Honorable Mention]
Companion of the 2020 ACM/IEEE International Conference on Human-Robot Interaction, 2020, Cambridge, United Kingdom
- C-2: A social robot mediator to foster collaboration and inclusion among children
Sarah Gillet, Wouter van den Bos, Iolanda Leite
Proceedings of Robotics: Science and Systems, 2020, Corvallis, Oregon, USA
- C-1: Recognition and 6D Pose Estimation of Large-scale Objects using 3D Semi-Global Descriptors
 David Nospes, Kirill Safronov, **Sarah Gillet**, Klaus Brillowski, Uwe E. Zimmermann
2019 16th International Conference on Machine Vision Applications (MVA), 2019

Mentoring

| | | |
|------|---|------------------------|
| 2024 | Alexander Leszczynski , Leveraging LLMs and behavior trees to understand user instructions | Master Student, KTH |
| 2023 | Georgios Hadjiantonis , Topic change in robot-moderated group discussions (Conference publication C-11) | Master Student, KTH |
| 2023 | Mohammed Akif , Safe Reinforcement Learning for Social Human-Robot Interaction (Conference publication C-12) | Master Student, KTH |
| 2022 | Maria Teresa Parreira , Robot Duck Debugging: Can Attentive Listening Improve Problem Solving? (Conference publications C-8 and C-9) | Research Engineer, KTH |
| 2021 | Paul Gorgis , Appropriate Robot Gaze for Mediating Confrontational Scenarios | Master Student, KTH |
| 2021 | Ravi Bir , Implementing Machine Learning Techniques to Improve the Performance of Socially Assistive Robots | Master Student, KTH |
| 2020 | Ke Zhang , Using Augmented-Reality for Visualizing a Social Robot's Internal State | Master Student, KTH |
| 2017 | Simon Schlegel , 2D object modeling for mobile robotics with LIDAR scanners | Master student, KUKA |
| 2016 | David Nospes , Recognition and 6D Pose Estimation of Large-scale Objects (Conference publication C-1) | Bachelor Student, KUKA |

Teaching experience

Teaching Assistance

SOCIAL ROBOTICS COURSE, KTH ROYAL INSTITUTE OF TECHNOLOGY

Stockholm, Sweden

10/2022 – 01/2023

- Responsible for course organization
- Teaching robot tutorials and the lecture on learning in and from human-robot interactions

Guest lecturer

SOCIAL ROBOTICS COURSE, KTH ROYAL INSTITUTE OF TECHNOLOGY

Stockholm, Sweden

11/2021

- Responsible for the lecture on learning in and from human-robot interactions

Teaching Assistance

ARTIFICIAL INTELLIGENCE, KTH ROYAL INSTITUTE OF TECHNOLOGY

Stockholm, Sweden

01/2019 – 01/2022

- Responsible for giving tutorials and grading of oral presentations
- Creation of new exercises

Thesis and Project Supervision

SUPERVISING MASTER, BACHELOR AND PROJECT STUDENTS

2015 – PRESENT

- Supervising project and master thesis students at KTH
- Supervising students in joined projects with academic supervisors while at KUKA Roboter GmbH

Teaching Assistance

DATA STRUCTURES, ALGORITHMS AND PROGRAMMING 1, DEPARTMENT OF COMPUTER SCIENCE, TU DORTMUND

Dortmund, Germany

2010 - 2014

Invited talks

- 06/2021 **First Furhat Conference on Social Robots in Research**, Non-verbal robot behaviors for learning in groups Online

Outreach

| | | |
|------------|--|-------------------|
| 2022 | 28 ready-to-go ideas for high school projects, KTH , Proposal of the topic of social robotics with small research questions ready for high school students. | KTH |
| 11/2021 | Demo Days, Code Haven , Talk about personal path to computer science and robotics research as part of a computer science outreach event. | Online |
| 2020, 2021 | Schnupperuni TU Dortmund , Invited talk at a plenary about industry and academic work experience | Online |
| 11/2019 | The Future Needs Giants , Event for young students that identify as women and or non-binary and want to learn about technical education at KTH. Demonstrating a human-robot interaction scenario as part of the robot exhibition. | Stockholm, Sweden |
| 09/2019 | ”Upplev, upptäck, utforska – som en ingenjör” at Tekniska Museet , Exhibiting a demonstration with the Pepper robot and answering questions about robots to students from different schools interested in engineering subjects | Stockholm, Sweden |
| 2016, 2017 | Introductory lecture to industrial robotics for children , Leading the lectures and practical exercises with a small mobile industrial robot | Augsburg, Germany |
| 2013, 2014 | Schnupperuni TU Dortmund , Planning, coordination and execution of a get-to-know week in computer science targeted at young women | Dortmund, Germany |

Academic service

Program Chair & General Chair

PIONEERS WORKSHOP AT ACM/IEEE INTERNATIONAL CONFERENCE ON HUMAN-ROBOT INTERACTION (HRI) 2022

Workshop Organizer

ROBOTS FOR LEARNING (R4L) WORKSHOP AT ACM/IEEE INTERNATIONAL CONFERENCE ON HUMAN-ROBOT INTERACTION 2023

Referee for Conference Proceedings

ROBOTICS: SCIENCE AND SYSTEMS (RSS), 2020

ACM/IEEE INT. CONFERENCE ON HUMAN-ROBOT INTERACTION (HRI), 2020–2024

IEEE/RSJ INTERNATIONAL CONFERENCE ON INTELLIGENT ROBOTS AND SYSTEMS (IROS), 2017, 2021–2022, 2024

ACM CHI CONFERENCE ON HUMAN FACTORS IN COMPUTING SYSTEMS, 2022

Referee for Journal Articles

PALADYN. JOURNAL OF BEHAVIORAL ROBOTICS

IEEE, TRANSACTIONS ON INTERACTIVE INTELLIGENT SYSTEMS

ACM, TRANSACTIONS ON HUMAN-ROBOT INTERACTION

SPRINGER, INTERNATIONAL JOURNAL OF SOCIAL ROBOTICS

IEEE, TRANSACTIONS ON AFFECTIVE COMPUTING

Student Volunteer

ACM/IEEE INT. CONFERENCE ON HUMAN-ROBOT INTERACTION (HRI), 2020