

# Nicole Salomons

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## RESEARCH OVERVIEW

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**I develop robots that can teach people in complex and dynamic environments.** I envision a future where robots are brought out of traditional tutoring settings to teach people across many aspects of their daily lives. By giving a robot the role of a peer, I have investigated how a robot can influence those around them, and been able to effectively tutor people during electronic circuit tasks. My work has also focused on how to create computational models of a user's capabilities enabling a robot to give personalized tutoring in workplace settings.

**Keywords:** human-robot interactions (HRI); peer-to-peer learning; user modelling; robot conformity;

## EDUCATION

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### Yale University

Ph.D. in Computer Science 2016-2022  
Master of Philosophy  
Master of Science

### Universidade Federal do Paraná (Brazil)

B.S. in Computer Science 2011-2015

### Smith College

Exchange Program 2014-2015

## EMPLOYMENT

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### Imperial College London

Lecturer in the Department of Computing and Imperial-X 2022-current

### Yale University

Social Robotics Lab  
Advisor: Brian Scassellati 2016-2022  
Research in Peer-to-Peer Learning, User Skill Modelling and Conformity

**University of Sheffield**

Natural Robotics Lab

Advisor: Roderich Gross

Research in Human-Swarm Interaction

October 2015- April 2016

**Yale University**

Social Robotics Lab

Advisor: Brian Scassellati and Iolanda Leite

Research in Child-Robot Interaction

Summer 2014 and Summer  
2015**Universidade Federal do Paraná**

Vision, Robotics and Imaging Lab

Advisor: Eduardo Todt

Research in Mobile Robotics and Computer Vision

2013-2015

**AWARDS AND GRANTS**

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**HRI Pioneers Workshop**

Funding to attend selective workshop for HRI researchers

March 2018

**CRA-W Grad Cohort**Travel Grant to attend Workshop for Women in  
Computing

April 2017

**Science without borders**Brazilian Government Sponsored Exchange Program  
Smith College Full Scholarship Plus Room and Board,  
and Monthly Allowance

2014-2015

**IEEE RAS Summer School in Robotics and  
Computer Vision**

Santiago, Chile

IEEE Travel Grant to Present Poster

December 2013

**PUBLICATIONS**

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**Publications in Preparation**

- P2** **Nicole Salomons**, Brian Scassellati. (2022). Continuous Bayesian Knowledge Tracing - Modelling User Skills over Time. [In Preparation]
- P1** **Nicole Salomons**, Emmanuel Adeniran, Nicholas Georgiou, Rebecca Ramanauth, Brian Scassellati. (2022). Interruptions Transferability on Novel Task and Novel Interruptions. [In Preparation]

## Peer-reviewed Journal Publications

- J3** **Nicole Salomons**, Sarah Strohkorb Sebo, Meiyong Qin, Brian Scassellati. (2021). A Minority of One against a Majority of Robots: Robots Cause Normative and Informational Conformity. In *ACM Transactions on Human-Robot Interaction (THRI)*.
- J2** Brian Scassellati, Laura Boccanfuso, Chien-Ming Huang, Marilena Mademtzi, Meiyong Qin, **Nicole Salomons**, Pamela Ventola, Frederick Shic. (2018). Improving Social Skills in Children with ASD Using a Long-Term, In-Home Social Robot. In *Science Robotics* 3(2018):21.
- J1** Leite, Iolanda, Marissa McCoy, Monika Lohani, Daniel Ullman, **Nicole Salomons**, Charlene Stokes, Susan Rivers, and Brian Scassellati. (2017). Narratives with Robots: The Impact of Interaction Context and Individual Differences on Story Recall and Emotional Understanding. In *Frontiers in Robotics and AI* 4 (2017): 29.

## Peer-reviewed Conference Publications

- C11** **Nicole Salomons**, Tom Wallenstein, Debasmita Ghose, Brian Scassellati. (2022). The Effects of an In-Home Embodied Robot in Long-Term Motivation to Exercise. In *International Conference on Robot and Human Interactive Communication (ROMAN)*.
- C10** **Nicole Salomons**, Kaitlynn Sierra, Adérónké Adéjàre, Brian Scassellati. (2022). “We Make a Great Team!”: Adults with Low Prior Domain Knowledge Learn more from a Peer Robot than a Tutor Robot. In *International Conference of Human-Robot Interaction*. Acceptance Rate: 24.8%
- C9** **Nicole Salomons**, Emir Akdere, Brian Scassellati. (2021). BKT-POMDP: Fast Action Selection for User Skill Modelling over Tasks with Multiple Skills. In *Proceedings of the 30th International Joint Conference on Artificial Intelligence (IJCAI)*. Acceptance Rate: 13.9%
- C8** Shannon Yasuda, Devon Doheny, **Nicole Salomons**, Sarah Strohkorb Sebo, Brian Scassellati. (2020). Perceived Agency of a Social Norm Violating Robot. In *Proceedings of the 42nd Meeting of the Cognitive Science Society (CogSci)*. Acceptance Rate: 41%
- C7** Joe Connolly, Viola Mocz, **Nicole Salomons**, Joseph Valdez, Nathan Tsoi, Brian Scassellati, Marynel Vazquez. (2020). Prompting Prosocial Human Interventions in Response to Robot Mistreatment. In *Proceedings of the Fifteenth Annual ACM/IEEE International Conference on Human-Robot Interaction (HRI)*. Acceptance Rate: 24%

- C6** **Nicole Salomons**, Sarah S. Sebo, Michael van der Linden, Brian Scassellati. (2018). Humans Conform to Robots: Disambiguating Trust, Truth and Conformity. In *Proceedings of the Thirteenth Annual ACM/IEEE International Conference on Human-Robot Interaction (HRI)*. Acceptance Rate: 23%
- C5** Gabriel Kapellmann-Zafra, **Nicole Salomons**, Andreas Kolling, and Roderich Gross. (2016) Human-Robot Swarm Interaction with Limited Situational Awareness. In *International Conference on Swarm Intelligence (ANTS)*, pp. 125-136.
- C4** Iolanda Leite, Marissa McCoy, Monika Lohani, **Nicole Salomons**, Kara McElvaine, Charlene Stokes, Susan Rivers, and Brian Scassellati. (2016). Autonomous Disengagement Classification and Repair in Multiparty Child-Robot Interaction. In *IEEE International Symposium on Robot and Human Interactive Communication (RO-MAN)*, pp. 525-532. Acceptance Rate: 48%
- C3** Laura Boccanfuso, Quan Wang, Iolanda Leite, Beibin Li, Colette Torres, Lisa Chen, **Nicole Salomons**, Claire Foster, Erin Barney, Yejin Amy Ahn, Brian Scassellati, Frederick Shic. (2016). A thermal emotion classifier for improved human-robot interaction. In *IEEE International Symposium on Robot and Human Interactive Communication (RO-MAN)*, pp. 718-723. Acceptance Rate: 48%
- C2** Iolanda Leite, Marissa McCoy, Monika Lohani, Daniel Ullman, **Nicole Salomons**, Charlene Stokes, Susan Rivers, and Brian Scassellati. (2015). Emotional storytelling in the classroom: Individual versus group interaction between children and robots. In *Proceedings of the Tenth Annual ACM/IEEE International Conference on Human-Robot Interaction (HRI)*, pp. 75-82. Acceptance Rate: 25%
- C1** Iolanda Leite, Marissa McCoy, Daniel Ullman, **Nicole Salomons**, and Brian Scassellati. (2015). Comparing Models of Disengagement in Individual and Group Interactions. In *Proceedings of the Tenth Annual ACM/IEEE International Conference on Human-Robot Interaction (HRI)*, pp. 99-105. Acceptance Rate: 25%

## Peer-reviewed Workshop Publications and Short Papers

- W1** **Nicole Salomons**, Brian Scassellati (2018). Trust and Conformity when Interacting with a Group of Robots. In *Companion of the 2018 ACM/IEEE International Conference on Human-Robot Interaction (HRI-Pioneers)*, pp. 315-316
- SP1** **Nicole Salomons**, Gabriel Kapellmann-Zafra, Roderich Gross. (2016). Human Management of a Robotic Swarm. In *The Annual Conference Towards Autonomous Robotic Systems (TAROS)*, pp. 282-287

## TEACHING

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- Intelligent Robotics Lab**, Yale University  
Teaching Assistant Spring 2020  
Mentored Students on Research Projects
- Intelligent Robotics**, Yale University  
Teaching Assistant Fall 2018, Fall 2019  
Graded Problem Sets and Exams, Weekly office hours
- Introduction to Databases**, Yale University  
Teaching Assistant Fall 2018, Fall 2019  
Created and Graded Problem Sets and Exams, Advised Class Projects.

## SERVICE

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### Journal Articles Refereeing

- Transactions on Human-Robot Interactions (THRI) 2019-2021  
International Journal of Social Robotics (SORO) 2020,2021  
Frontiers in Robotics and AI 2019  
Interaction Studies 2019

### Conference Papers Refereeing

- Conference on Human-Robot Interaction (HRI) 2017-2021  
Conference on Robot and Human Interactive Communication (RO-MAN) 2021  
Conference on Computer-Human Interaction (CHI) 2020  
Conference on Artificial Intelligence (AAAI) 2018,2020  
Robotics: Science and Systems (RSS) 2020  
Conference on Affective Computing and Intelligent Interaction (ACII) 2019  
International Conference on Robotics and Automation (ICRA) 2018

### Selected Outreach

- Social Robotics Open lab days 2016-2019  
Led High School Intern Process 2019  
World Science Festival Exhibitor, New York City, NY 2014

## INVITED PANELS AND TALKS

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Meninas nas Exatas (Brazilian Women in Science Panel Speaker)	2021
Invited Guest Lecture in Science of Modern Technology and Public Policy	2021
USR Event to Discuss HRI 2020 papers	2020

## MENTORING

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Aderonke Adejare (Undergraduate Student)	2021
Tom Wallenstein (Undergraduate Student)	2021
Kaitlynn Pineda (Undergraduate Student)	2018-2021
Keoni Spencer (Undergraduate Student)	2020
Shannon Yasuda (Undergraduate Student)	2019
Evani Dalal (High School Intern)	2019
Emir Akdere (Undergraduate Student)	2019
Caroline Lima Guimaraes (Undergraduate Student)	2019
Zeynep Karacan (Undergraduate Student)	2018
Maxim Baranov (Undergraduate Student)	2017
Abigail Waugh (Undergraduate Student)	2017
David Villanueva (High School Intern)	2017

## SELECTED PRESS

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Kids With Autism Learn, Grow With the 'Social Robot'(US News)	2018
Yale study finds autonomous robots help improve social skills of autistic children (New Scientist)	2018
Can Robots Keep Humans from Abusing Other Robots? (IEEE Spectrum)	2020
What Makes People Abuse Robots (Wall Street Journal)	2020