SARAH SEBO

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RESEARCH OVERVIEW

I develop robots that improve the performance of human-robot teams by shaping team dynamics to promote inclusion, trust, and cohesion. Using computational models that detect relevant verbal and nonverbal social cues, predict high-level social dynamics, and generate decision-making policies for robot actions, I explore how a robot's social actions within a group shape human team members' behavior.

Key words: human-robot interaction (HRI), robotics, groups and teams

EMPLOYMENT

Assistant Professor 2020 - current
Univeristy of Chicago, Computer Science Department

EDUCATION

Ph.D. in Computer Science 2014 - 2020
Yale University, Advisor: Brian Scassellati
Thesis Title: "Developing Robots Teammates that Enhance Social Dynamics and Performance in Human-Robot Teams"
Thesis Committee: Brian Scassellati, Malte Jung, Marynel Vázquez, Nicholas Christakis

B.S. in Electrical and Computer Engineering 2010 - 2014
Franklin W. Olin College of Engineering

JOURNAL PUBLICATIONS

J2 **Sarah Sebo**, Brett Stoll, Brian Scassellati, Malte F. Jung (2020). Robots in Groups and Teams: A Literature Review. To Appear in *Proceedings of the ACM on Human-Computer Interaction*, 4(CSCW2).

J1 Margaret Traeger, **Sarah Strohkorb Sebo**, Malte F. Jung, Brian Scassellati, Nicholas A. Christakis (2020). Vulnerable Robots Positively Shape Human Conversational Dynamics in a Human-Robot Team. *Proceedings of the National Academy of Sciences (PNAS)*, 117(12), 6370-6375.

CONFERENCE PUBLICATIONS

C8 Shannon Yasuda, Devon Doheny, **Sarah Strohkorb Sebo**, Nicole Salomons, Brian Scassellati (2020). Perceived Agency of a Social Norm Violating Robot. In *Proceedings of the 42nd Conference of the Cognitive Science Society (CogSci 2020)*, 1480-1486.
Acceptance rate: 63%

C7 **Sarah Strohkorb Sebo**, Ling Liang Dong, Nicholas Chang, Brian Scassellati (2020). Strategies for the Inclusion of Human Members within Human-Robot Teams. In *Proceedings of the the 15th ACM/IEEE International Conference on Human Robot Interaction (HRI 2020)*, 309-317. ACM.
Acceptance rate: 24%

C6 **Sarah Strohkorb Sebo**, Priyanka Krishnamurthi, Brian Scassellati (2019). "I Don't Believe You": Investigating the Effects of Robot Trust Violation and Repair. In *Proceedings of the 14th ACM/IEEE International Conference on Human Robot Interaction (HRI 2019)*. 57-65. IEEE.
Acceptance rate: 24%

C5 Aditi Ramachandran*, **Sarah Strohkorb Sebo***, Brian Scassellati (2018). Personalized Robot Tutoring using the Assistive Tutor POMDP (AT-POMDP). In *Proceedings of The 33rd AAAI Conference on Artificial Intelligence (AAAI)*, vol. 33, 8050-8057.
Acceptance rate: 16%, *equal contribution

C4 **Sarah Strohkorb Sebo**, Margaret Traeger, Malte Jung, Brian Scassellati (2018). The Ripple Effects of Vulnerability: The Effects of a Robots Vulnerable Behavior on Trust in Human-Robot Teams. In *Proceedings of the 13th ACM/IEEE International Conference on Human Robot Interaction (HRI 2018)*, 178-186.
Acceptance rate: 23%

C3 Nicole Salomons, Michael Van der Linden, **Sarah Strohkorb Sebo**, Brian Scassellati (2018). Humans Conform to Robots: Disambiguating Trust, Truth, and Conformity. In *Proceedings of the 13th ACM/IEEE International Conference on Human Robot Interaction (HRI 2018)*, 187-195.
Acceptance rate: 23%

C2 **Sarah Strohkorb**, Ethan Fukuto, Natalie Warren, Charles Taylor, Bobby Berry, Brian Scassellati (2016). Improving Human-Human Collaboration Between Children With a Social Robot. In *Proceedings of the 25th IEEE International Symposium on Robot and Human Interactive Communication (RO-MAN 2016)*, 551-556.
Acceptance rate: 47%

C1 **Sarah Strohkorb**, Iolanda Leite, Natalie Warren, Brian Scassellati (2015). Classification of Childrens Social Dominance in Group Interactions with Robots. In *Proceedings of the 17th ACM International Conference on Multimodal Interaction (ICMI 2015)*, 227-234.
Acceptance rate: 41%

WORKSHOP PAPERS AND ABSTRACTS

W5 **Sarah Strohkorb Sebo** and Brian Scassellati (2019). Enhancing Social Collaboration in Human-Robot Teams. In *Proceedings of the 2019 Pioneers Workshop at the 15th Robotics: Science and Systems Conference (RSS 2019).*

W4 **Sarah Strohkorb** and Brian Scassellati (2017). Cultivating Psychological Safety in Human-Robot Teams with Social Robots. In *Proceedings of the 2017 Workshop on Robots in Groups and Teams at the 20th ACM Conference on Computer-Supported Collaborative Work and Social Computing (CSCW 2017).*

W3 **Sarah Strohkorb**, Chien-Ming Huang, Aditi Ramachandran, Brian Scassellati (2016). Establishing Sustained, Supportive Human-Robot Relationships: Building Blocks and Open Challenges. In *Proceedings of the 2016 AAAI Spring Symposium on Enabling Computing Research in Socially Intelligent Human-Robot Interaction: A Community-Driven Modular Research Platform.* AAAI Press.

W2 **Sarah Strohkorb**, Brian Scassellati. Promoting Collaboration with Social Robots. In *Proceedings of the Eleventh ACM/IEEE International Conference on Human Robot Interaction (HRI 2016).*

W1 **Sarah Strohkorb**, Brian Scassellati (2015). Promoting Social Collaboration between Children with a Social Robot. In *Proceedings of the 2015 AAAI Fall Symposium on AI for Human-Robot Interaction (AI-HRI 2015).* AAAI Press.

THESIS

Sarah Strohkorb Sebo (2020). Developing Robot Teammates that Enhance Social Dynamics and Performance in Human-Robot Teams. *PhD Thesis.* Yale University.

TEACHING

Topics in Human-Robot Interaction, University of Chicago — Autumn 2020

INVITED TALKS

University of Chicago HCI Club, *Social Dynamics in Human-Robot Interaction* — Sept 2020

Cornell University, *Trust in HRI: Exploring the Influence of a Social Robot on Trust* — Oct 2018

MENTORING

Co-authored publication numbers refer to the publication lists above.

Hannah Burgess, Yale Undergraduate - Senior Cognitive Science Thesis Project — 2019

Michal Lewkowicz, High School Student then Yale Undergraduate — 2019

Tom Wallenstein, Yale Undergraduate — 2019

Sean Hackett, Yale Undergraduate - Senior Computer Science Thesis Project — 2019

Shannon Yasuda, Yale Undergraduate — 2019
Publications: C8

Kayleigh Bishop, Yale Undergraduate — 2018-2019

Michael Schutzman, High School Student 2018

Nicholas Chang, Yale Undergraduate 2018
Publications: C7

Ling Dong, Yale Undergraduate 2018
Publications: C7

Evelyn Roberts, Yale Undergraduate - Senior Cognitive Science Thesis Project 2017-2019

Priyanka Krishnamurthi, Yale Undergraduate 2017-2018
Publications: C6

Neil Madhavani, High School Student 2017

Rachel Ha, Yale Undergraduate - Senior Cognitive Science Thesis Project 2017

Adam Erickson, Yale Undergraduate 2016

Isabelle Gallagher, High School Student 2016

Ethan Fukuto, Pomona College Undergraduate 2015
Publications: C2

Bobby Berry, Yale Undergraduate 2015
Publications: C2

Charles Taylor, Yale Undergraduate 2015
Publications: C2

Natalie Warren, Yale Undergraduate 2014-2015
Publications: C1, C2

SERVICE

Conference Program Committee Member

ACM/IEEE Conference on Human-Robot Interaction (HRI) 2021

Workshop Program Committee Member

HRI Pioneers Workshop at HRI 2017, General Co-Chair 2016-2017

Conference Paper Referee

Conference on Computer Supported Collaborative Work and Social Computing (CSCW) 2020
ACM/IEEE Conference on Human-Robot Interaction (HRI) 2017-2020
Int. Symposium on Robot and Human Interactive Communication (RO-MAN) 2016-2018, 2020
International Conference on Intelligent Robots and Systems (IROS) 2017,2020
International Conference on Human Factors in Computing Systems (CHI) 2019
AAAI Conference on Artificial Intelligence (AAAI) 2019
International Conference on Robotics and Automation (ICRA) 2019
ACM Symposium on on User Interface Software and Technology (UIST) 2019
Interaction Design and Children (IDC) Conference 2018

Journal Article Referee

ACM Transactions on Human-Robot Interaction	2018, 2020
Interaction Studies	2019
IEEE Transactions on Cognitive and Developmental Systems	2017
International Journal of Child-Computer Interaction	2017
International Journal of Social Robotics	2016

Conference Organizing Committee Roles

ACM/IEEE Conference on Human-Robot Interaction (HRI), Registration Chair	2021

SELECTED OUTREACH

Yale Social Robotics Lab Open Houses, Yale University, New Haven CT 2015-2019
Robotics demonstrations including Nao, Keepon, and Jibo at annual lab open houses for the public, drawing approximately 100 people each time the event was held from the greater New Haven community.

Yale Young Global Scholars Program Presentations, Yale University, New Haven CT 2019
Presented exciting research about human-robot tutoring to several 200-student sessions of high school students from around the globe interested in studying science and engineering.

Teen Science Club Presentation, Guilford Library, Guilford CT 2016
Presented information and a robotics demonstration to a group of local teens interested in robotics.

PRESS

03/27/2020 Empathy Machine: Humans Communicate Better after Robots Show Their Vulnerable Side, Scientific American

03/09/2020 Robots that admit mistakes foster better conversation in humans, Yale News

03/29/2019 Robot discovers that lying about a betrayal helps to rebuild trust, New Scientist

10/03/2016 Taking Robots to the Next Level: Small Talk and Bear Hugs?, PC Mag