

# Sean Andrisc

Microsoft Research

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## Research Interests

Situated embodied interaction  
Socially interactive systems

Human-robot interaction  
Embodied virtual agents

## Employment

- 2016 – present **Researcher**, *Microsoft Research*, Redmond, WA.  
Member of the Perception and Interaction group.  
Conducting research on social robots and other situated interactive systems deployed “in-the-wild.”
- 2010 – 2016 **Graduate Researcher**, *UW–Madison Department of Computer Sciences*, Madison, WI.  
Active member of Human-Computer Interaction and Visual Computing laboratories.
- Summer 2015 **Research Intern**, *Microsoft Research*, Redmond, WA.  
Investigated methods by which social robots can distinguish users’ intentions and shape interactions.
- Spring 2014 **Graduate Research Fellow**, *ENSTA ParisTech*, Palaiseau, France.  
Recipient of the Chateaubriand Research Fellowship offered by the Embassy of France in the United States, funding five months of research in France.
- Fall 2012 **Research & Development Lab Associate**, *Disney Research Pittsburgh*, Pittsburgh, PA.  
Researched multiparty turn-taking with groups of children interacting with a virtual agent system implemented in Unity and Maya.
- 2008 – 2010 **Undergraduate Research Assistant**, *University of Minnesota / Medtronic*, Minneapolis, MN.  
Developed a system to convey cardiac activity in real time using novel visualizations of the heart surface for physicians to use while performing surgery involving cardiac lead implantation.
- 2009 – 2010 **Researcher**, *MinERS (Minnesota Emergency Response Squad)*, Minneapolis, MN.  
Developed artificial intelligence strategies for agents in the RoboCup Rescue Agent Simulation.

## Education

- 2010 – 2016 **PhD in Computer Science**, *University of Wisconsin–Madison*.  
Department of Computer Sciences  
*Dissertation title*: Gaze Mechanisms for Situated Interaction with Embodied Agents  
*Committee*: Bilge Mutlu (co-chair), Michael Gleicher (co-chair), Kevin Ponto, David Shaffer, Adriana Tapus
- 2010 – 2012 **Masters of Science in Computer Science**, *University of Wisconsin–Madison*.
- 2006 – 2010 **Bachelors of Science in Computer Science**, *University of Minnesota–Twin Cities*.  
Summa Cum Laude  
High Distinction  
Minor in Mathematics

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## Teaching Experience

- Spring 2015 **Instructor (Introduction to Human-Computer Interaction)**, UW–Madison.  
Lectured 63 students on basic HCI principles, methods, and applications.  
Mentored student teams on designing and executing class projects.  
Teaching evaluation: 4.52/5.00
- 2008 – 2009 **Honors Tutor**, *University of Minnesota Honors Program*, Minneapolis, MN.  
Worked one-on-one with students to provide assistance in math, physics, and computer science.
- 2008 – 2009 **Orientation Counselor**, *University of Minnesota Honors Program*, Minneapolis, MN.  
Advised incoming freshmen, helping them to schedule classes and start thinking about research.

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## Publications

### Dissertation

- **Andrist, S.** (2016). *Gaze Mechanisms for Situated Interaction with Embodied Agents* (Doctoral dissertation). University of Wisconsin-Madison, WI, USA.

### Book Chapters

- Mutlu, B., **Andrist, S.**, and Sauppé, A. Enabling Human-Robot Dialogue. In J. Markowitz (Ed.) *Robots that Talk and Listen*. De Gruyter.

### Journal Papers

- **Andrist, S.**, Bohus, D., Mutlu, B., Schlangen, D. (2016). *Turn-Taking and Coordination in Human-Machine Interaction (Introduction)*. In *AI Magazine*. 37:4. 5-6.
- **Andrist, S.**, Collier, W., Gleicher, M., Mutlu, B., and Shaffer, D. (2015). Look Together: Analyzing Gaze Coordination with Epistemic Network Analysis. *Frontiers in Psychology*. 6:1016. 1–15.
- Huang, C.-M., **Andrist, S.**, Sauppé, A., and Mutlu, B. (2015). Using Gaze Patterns to Predict Task Intent in Collaboration. *Frontiers in Psychology*. 6:1049. 1–12.
- Pejsa, T., **Andrist, S.**, Mutlu, B., and Gleicher, M. (2015). Gaze and Attention Management for Embodied Conversational Agents. *ACM Transactions on Interactive and Intelligent Systems (TiiS)*. 5(1), Article 3. 34 pages.
- Ruhland, K., Peters, C. E., **Andrist, S.**, Badler, J. B., Badler, N. I., Gleicher, M., Mutlu, B. and McDonnell, R. (2015). A Review of Eye Gaze in Virtual Agents, Social Robotics and HCI: Behaviour Generation, User Interaction and Perception. *Computer Graphics Forum*.

### Refereed Full Conference Papers

- **Andrist, S.**, Gleicher, M., Mutlu, B. (2017). *Looking Coordinated: Bidirectional Gaze Mechanisms for Collaborative Interaction with Virtual Characters*. In *Proceedings of the 2017 CHI Conference on Human Factors in Computing Systems (CHI '17)*. ACM. New York, NY, USA. 2571-2582. **[Best of CHI Honorable Mention Award]**
- **Andrist, S.**, Mutlu, B., and Tapus, A. (2015). Look Like Me: Matching Robot Personality via Gaze to Increase Motivation. In *Proceedings of the 33rd Annual ACM Conference on Human Factors in Computing Systems (CHI '15)*. ACM. New York, NY, USA. 3603-3612. **[Best of CHI Honorable Mention Award]**
- **Andrist, S.**, Ziadee, M., Boukaram, H., Mutlu, B., and Sakr, M. (2015). Effects of Culture on the Credibility of Robot Speech: A Comparison between English and Arabic. In *Proceedings of the Tenth Annual ACM/IEEE International Conference on Human-Robot Interaction (HRI '15)*. ACM. New York, NY, USA. 157-164.

- **Andrist, S.**, Tan, X. Z., Gleicher, M., and Mutlu, B. (2014). Conversational Gaze Aversion for Humanlike Robots. In *Proceedings of the 2014 ACM/IEEE International Conference on Human-Robot Interaction (HRI '14)*. ACM. New York, NY, USA. 25–32. [**Best Paper Award Nominee**]
- Ruhland, K., **Andrist, S.**, Badler, J. B., Peters, C. E., Badler, N. I., Gleicher, M., Mutlu, B., and McDonnell, R. (2014). “Look Me in the Eyes”: A Survey of Eye and Gaze Animation for Virtual Agents and Artificial Systems. In *Eurographics 2014 - State of the Art Reports (EG '14 STARS)*.
- **Andrist, S.**, Mutlu, B., and Gleicher, M. (2013). Conversational Gaze Aversion for Virtual Agents. In R. Aylett, B. Krenn, C. Pelachaud, & H. Shimodaira (Eds.), *Proceedings of the 13th International Conference on Intelligent Virtual Agents (IVA '13)*. Springer Berlin Heidelberg. 249–262. [**Highly Commended Paper**]
- **Andrist, S.**, Spannan, E., and Mutlu, B. (2013). Rhetorical Robots: Making Robots More Effective Speakers Using Linguistic Cues of Expertise. In *Proceedings of the 8th ACM/IEEE International Conference on Human-Robot Interaction (HRI '13)*. IEEE Press. Piscataway, NJ, USA. 341–348.
- Leite, I., Hajishirzi, H., **Andrist, S.**, and Lehman, J. (2013). Managing Chaos: Models of Turn-taking in Character-multichild Interactions. In *Proceedings of the 15th International Conference on Multimodal Interaction (ICMI '13)*. ACM. New York, NY, USA. 43–50.
- **Andrist, S.**, Pejsa, T., Mutlu, B., and Gleicher, M. (2012). Designing Effective Gaze Mechanisms for Virtual Agents. In *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems (CHI '12)*. ACM. New York, NY, USA. 705–714.
- Nanjanath, M., Erlandson, A., **Andrist, S.**, Ragipindi, A., Mohammed, A., Sharma, A., and Gini, M. (2010). Decision and Coordination Strategies for RoboCup Rescue Agents. In *Proceedings of the Second International Conference on Simulation, Modeling, and Programming for Autonomous Robots (SIMPAN '10)*. 473–484.

## Refereed Short Conference Papers

- **Andrist, S.**, Bohus, D., Yu, Z., Horvitz, E. (2016). *Are You Messing with Me? Querying about the Sincerity of Interactions in the Open World*. In *Proceedings of the 2016 ACM/IEEE International Conference on Human-Robot Interaction (HRI '16 Late-breaking Reports)*. ACM. New York, NY, USA.
- Bellamy, R. K. E., **Andrist, S.**, Bickmore, T., Churchill, E. F., Erickson, T. (2017). *Human-Agent Collaboration: Can an Agent be a Partner?*. In *Proceedings of the 2017 CHI Conference Extended Abstracts on Human Factors in Computing Systems (CHI EA '17)*. ACM. New York, NY, USA. 1289-1294.
- **Andrist, S.**, Bohus, D., Yu, Z., and Horvitz, E. (2016). *Are You Messing with Me? Querying about the Sincerity of Interactions in the Open World*. In *Proceedings of the 2016 ACM/IEEE International Conference on Human-Robot Interaction (HRI '16 Late-breaking Reports)*. ACM. New York, NY, USA.
- **Andrist, S.**, Leite, I., and Lehman, J. (2013). Fun and Fair: Influencing Turn-taking in a Multi-party Game with a Virtual Agent. In *Proceedings of the 12th International Conference on Interaction Design and Children (IDC '13)*. ACM. New York, NY, USA. 352–355.

## Refereed Workshop Papers

- **Andrist, S.** (2013). Controllable Models of Gaze Behavior for Virtual Agents and Humanlike Robots. In *Proceedings of the 15th ACM International Conference on Multimodal Interaction (ICMI '13), Doctoral Consortium*. ACM. New York, NY, USA. 333–336.
- Leite, I., Hajishirzi, H., **Andrist, S.**, and Lehman, J. (2013). Take or Wait? Learning Turn-Taking from Multiparty Data. In *AAAI Conference on Artificial Intelligence (Late-Breaking Developments)*.

- **Andrist, S.**, Pejsa, T., Mutlu, B., and Gleicher, M. (2012). A Head-Eye Coordination Model for Animating Gaze Shifts of Virtual Characters. In *Proceedings of the 14th International Conference on Multimodal Interaction (ICMI '12), 4th Workshop on Eye Gaze in Intelligent Human Machine Interaction (Gaze-In '12)*. ACM. New York, NY, USA.

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## Honors

Best of CHI 2017 Honorable Mention Award  
Graduate Student Research Award from UW Madison Department of Computer Sciences: 2016  
First Place Winner (out of 23) in the UW Graduate School's *Three Minute Thesis* Competition: 2015  
Best of CHI 2015 Honorable Mention Award  
HRI 2014 Best Paper Award Nominee  
Chateaubriand Research Fellowship: 2013-2014  
IVA 2013 Highly Commended Paper Award  
Travel scholarship to IVA conference in Edinburgh, UK: 2013  
National Science Foundation (NSF) Graduate Research Fellowship (Honorable Mention): 2012  
Grace Wahba Fellowship: 2010-2011  
ShopKo and Lando Scholarships: 2006-2007  
Dean's List distinction: 2006-2010

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## Professional Activities

Organized the AAAI 2015 Spring Symposium on *Turn-Taking and Coordination in Human-Machine Interaction*.  
Co-organizers: Dan Bohus (Microsoft Research), Bilge Mutlu (UW-Madison), Eric Horvitz (Microsoft Research), David Schlangen (Bielefeld University).  
Invited participant at the HRI Pioneers Workshop in Bielefeld, Germany: 2014  
Invited participant at the ICMI Doctoral Consortium in Sydney, Australia: 2013  
Student volunteer at 2013 International Conference on Human-Robot Interaction  
Service learning project in 2013 to teach computer programming to 4th and 5th grade students  
ACM Student Member

### Referee for Conference Proceedings

ACM/SigCHI Conference in Human Factors in Computing (CHI)  
ACM/IEEE Human-Robot Interaction Conference (HRI)  
ACM/SigCHI International Conference on Human-Agent Interaction (HAI)  
IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)  
ACM International Conference on Multimodal Interaction (ICMI)  
International Conference on Intelligent Virtual Agents (IVA)

### Referee for Journal Articles

International Journal of Social Robotics  
Journal of Human-Robot Interaction  
Interaction Studies Journal  
ACM Transactions on Interactive Intelligent Systems  
IEEE Transactions on Autonomous Mental Development

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## Selected Press

Wired (UK), 2016: [This robot changes how it looks depending on your personality](#)  
IEEE Spectrum (US), 2016: [This robot changes how it looks at you to match your personality](#)  
Discovery News (US), 2016: [Robot adjusts stare, makes itself less creepy](#)  
Popular Science (US), 2014: [Robots seem more thoughtful if they glance away while they talk](#)  
New Scientist (UK), 2014: [The robot tricks to bridge the uncanny valley](#)

IEEE Spectrum (US), 2014: [What robot behavior makes people feel uncomfortable?](#)

Science Nation (US), 2012: [Robots that can teach humans](#)

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## Professional References

**Bilge Mutlu, Associate Professor**

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