

Ruchen Wen

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(CV updated February 2021)

➡ RESEARCH INTERESTS

My research focuses on **human-robot interaction (HRI)**, particularly **linguistic HRI**, and **robot ethics**. I am also interested in **emotion understanding and representation** and **(robotics-centric) Computer Science education**.

➡ EDUCATION

Ph.D., Computer Science , <i>Colorado School of Mines, Golden, CO</i>	May 2023 (Expected)
Advisor: Prof. Tom Williams	
M.S., Software Engineering , <i>University of Wisconsin-La Crosse, La Crosse, WI</i>	May 2018
B.E., Software Engineering , <i>South-Central University for Nationalities, China</i>	June 2016

➡ PUBLICATIONS

Ruchen Wen, Boyoung Kim, Elizabeth Phillips, Qin Zhu and Tom Williams. “Comparing Strategies for Robot Communication of Role-Grounded Moral Norms”. In: *Proceedings of the Companion of the 16th ACM/IEEE International Conference on Human-Robot Interaction (HRI LBRs)*. 2021.

Boyoung Kim, Ruchen Wen, Qin Zhu, Tom Williams and Elizabeth Phillips. “Robots as Moral Advisors: The Effects of Deontological, Virtue, and Confucian Ethics on Encouraging Honest Behavior”. In: *Proceedings of the Companion of the 16th ACM/IEEE International Conference on Human-Robot Interaction (alt.HRI)*. 2021.

Ruchen Wen, Tom Williams and Mohammed Aun Siddiqui. “Dempster-Shafer Theoretic Learning of Indirect Speech Act Comprehension Norms” In: *Proceedings of the 34th AAAI Conference on Artificial Intelligence (AAAI)*. 20.6% acceptance rate, 2020.

Qin Zhu, Tom Williams, Blake Jackson, and Ruchen Wen. “Blame-Laden Moral Rebukes and the Morally Competent Robot: A Confucian Ethical Perspective” In: *Science and Engineering Ethics*. 2020.

Tom Williams, Qin Zhu, Ruchen Wen and Ewart J. de Visser. “The Confucian Matador: Three Defenses Against the Mechanical Bull”. In: *Proceedings of the Companion of the 15th ACM/IEEE International Conference on Human-Robot Interaction (alt.HRI)*. 2020.

Tom Williams, Daniel Grollman, Mingyuan Han, Ryan Blake Jackson, Jane Lockshin, Ruchen Wen, Zachary Nahman, and Qin Zhu. “Excuse Me, Robot’: Impact of Polite Robot Wakewords on Human-Robot Politeness”. In: *Proceedings of the International Conference on Social Robotics*. 2020.

Qin Zhu, Tom Williams and Ruchen Wen. “Confucian Robot Ethics” In: *Proceedings of Computer Ethics - Philosophical Enquiry (CEPE)*. 2019.

Ruchen Wen, Ryan Blake Jackson, Tom Williams and Qin Zhu. “Towards A Role Ethics Approach to Command Rejection” In: *Proceedings of the HRI workshop on the Dark Side of Human-Robot Interaction*. 2019.

Ryan Blake Jackson, Ruchen Wen and Tom Williams. “Tact in Noncompliance: The Need for Pragmatically Apt Responses to Unethical Commands” In: *Proceedings of the AAAI/ACM Conference on Artificial Intelligence, Ethics, and Society (AIES)*. 15% acceptance rate (oral), 2019.

➡ ABSTRACTS & PRESENTATIONS

Extended Abstract, *March 2021*.

16th Human-Robot Interaction (HRI) Pioneers Workshop (HRI Pioneers 2021)

“Toward Hybrid Relational-Normative Models of Robot Cognition”

Short Presentation, *August 2020*.

8th Annual Conference on Advances in Cognitive Systems (ACS 2020)

“Dempster-Shafer Theoretic Learning of Indirect Speech Act Comprehension Norms”

Invited Speaker, *July 2020*.

11th International Conference on Applied Human Factors and Ergonomics (AHFE 2020)

“Exploring Robotic Moral Competence Through Role Ethics”

Graduate Student Talk, *November 2018*.

Rocky Mountain Celebration of Women in Computing (RMCWiC 2018), Lakewood, CO

“Towards a Role-Based Framework for Moral Robots” (**Honorable Mention Graduate Student Talk**)

➡ RESEARCH EXPERIENCE

Research Assistant

MIRROR Lab, Colorado School of Mines, Golden, CO; Director: Dr. Tom Williams Aug 2018 – present

- Investigating moral human-robot interaction
- Conducting experiments to explore moral communication strategies
- Implemented DS-Theoretic norm learning algorithm
- Developing role-based framework for robotic moral competence
- Supervising undergraduate and high school students

Research Student

Department of Computer Science, UWL, La Crosse, WI; Advisor: Dr. Allison Sauppé Oct 2017 – July 2018

- Investigated affective grounding in human-human and human-robot interaction
- Examined bid/response action series and three types of behaviors in human interaction

Master’s Thesis Research

Department of Computer Science, UWL, La Crosse, WI; Advisor: Dr. Martin Allen Sep 2017 – May 2018

- Developed a robotics tracking and control system for future robotic teaching and AI/ML research
- Utilized cameras that were installed in the lab as the vision system instead of on-board cameras
- Worked with OpenCV, a vision processing library, to detect elements in the actual environment, changing the virtual environment by adding and removing augmented-reality elements
- Established a server to coordinate data transmission between the vision system and multiple users

Research Student

Department of Computer Science, SCUN, China; Advisor: Dr. Yilin Kang Summer 2017

- Explored different possibilities of companion robots
- Devised a chat-bot with certain actions triggering mechanisms

Undergraduate Research Student

Department of Computer Science, SCUN, China; Advisor: Dr. Xinnian Wang

Dec 2015 June 2016

- Introduced a difficulty adaption game design strategy based on user performance

Undergraduate Lab Assistant

New Thread Laboratory, SCUN, Wuhan, China; Director: Dr. Jun Tie

Nov 2014 June 2015

- Member of Android group, focused on user interface design and interactive design