

Fan Jun Bu

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I am a Ph.D. candidate at Cornell Tech, advised by Dr. Wendy Ju. My research focuses on how context shapes human-robot interaction (HRI). I design systems that integrate environmental, social, and situational factors to improve robot adaptability and responsiveness. My work bridges robotics, human-computer interaction, and AI, aiming to advance the design of interactive robotic systems.

EDUCATION

- June 2021 – **PhD Candidate**, Cornell Tech
Present Advised by Professor Wendy Ju,
New York, NY
- August 2017 – **Johns Hopkins University**, Baltimore, MD
June 2021 Whiting School of Engineering, B.S. in Applied Mathematics and Statistics,
Computer Science, and Cognitive Science.
Whiting School of Engineering, M.S. in Computer Science

POSITIONS

- May 2024 – **Research Intern**, Toyota Research Institute,
August 2024 Human-Interactive Driving,
Los Altos
- May 2020 – **Research Assistant**, Personal Robotics Lab, University of Washington
April 2021 Advised by Tapomayukh Bhattacharjee (now an assistant professor at Cornell University),
Remote
- August 2020 – **Research Assistant**, Intuitive Computing Lab, Johns Hopkins University
April 2021 Advised by Professor Chien-Ming Huang,
Baltimore, Maryland
- Jun 2019 – **Research Intern**, Learning Algorithms and System Laboratory (LASA), École
August 2019 Polytechnique Fédérale de Lausanne
Laussane, Switzerland
- October 2017– **Research Assistant**, Honey Lab, Johns Hopkins University University
April 2021 Advised by Professor Christopher Honey,
Baltimore, MD

TEACHING ASSISTANTSHIPS

- Spring 2023 **INFO5755/INFO6755/CS5755/CS6755. Mobile Human Robot Interaction Design** Cornell Tech.
Develop new labs for students to learn ROS and build mobile robots.
(Outstanding TA Award)
- Fall 2021 **CS4750/CS5750/ECE4770/MAE4760. Foundations of Robotics.** Cornell University.
Design assignments for students to learn robot kinematics, planning, and control.
(Outstanding TA Award)
- Fall 2020 **601.457. Computer Graphics.** Johns Hopkins University.
Help students with basic computer graphics operations in C++.
- Fall 2019, Spring 2020 **553.430. Introduction to Statistics.** Johns Hopkins University.
Teach weekly sessions to cover detailed statistical derivations and examples.

PUBLICATIONS

- Papers **Fanjun Bu**, Wendy Ju. “ReStory: VLM-augmentation of Social Human-Robot Interaction Datasets”. In: *In: Palinko, O. et al. (eds) Social Robotics. ICSR + AI 2024. Lecture Notes in Computer Science, Springer.*
- Fanjun Bu**, Wendy Ju. “SSUP-HRI: Social Signaling in Urban Public Human-Robot Interaction dataset”. In: *In: Palinko, O. et al. (eds) Social Robotics. ICSR + AI 2024. Lecture Notes in Computer Science, Springer.*
- Fanjun Bu**, Hiroshi Yasuda. “Boosting Visual Fidelity in Driving Simulations through Diffusion Models”. In: *Extended Abstracts of the CHI Conference on Human Factors in Computing Systems.* 2025, pp. 1–6.
- Matt Franchi, Maria Teresa Parreira, **Fanjun Bu**, Wendy Ju. “The Robotability Score: Enabling Harmonious Robot Navigation on Urban Streets”. In: *Proceedings of the CHI Conference on Human Factors in Computing Systems.* 2025.
- Hannah R.M. Pelikan, **Fanjun Bu**, Wendy Ju. “The People Behind the Robots: How Wizards Wrangle Robots in Public Deployments”. In: *Proceedings of the CHI Conference on Human Factors in Computing Systems.* 2025.
- Barry Brown, **Fanjun Bu**, Ilan Mandel, Wendy Ju. “Trash in Motion: Emergent interactions with robotic trashcans in a public square”. In: *Proceedings of the CHI Conference on Human Factors in Computing Systems.* 2024, pp. 1–15.
- Fanjun Bu**, Alexandra Bremers, Mark Colly, Wendy Ju. “Field Notes on Deploying Research Robots in Public Spaces”. In: *Extended Abstracts of the CHI Conference on Human Factors in Computing Systems.* 2024, pp. 1–6.

Fanjun Bu, Stacey Li, David Goedicke, Mark Colley, Gyanendra Sharma, Wendy Ju. “Portobello: Extending Driving Simulation from the Lab to the Road”. In: *Proceedings of the CHI Conference on Human Factors in Computing Systems*. 2024, pp. 1–13.

Sharon Yavo-Ayalon, Yuzhen Zhang, Ruixiang Han, Swapna Joshi, **Fanjun Bu**, Cooper Murr, Lunshi Zhou, Wendy Ju. “Behind the Scenes of CXR: Designing a Geo-Synchronized Communal eXtended Reality System”. In: *Designing Interactive Systems Conference*. DIS ’24. IT University of Copenhagen, Denmark: Association for Computing Machinery, 2024, pp. 180–196.

David Goedicke, Alexandra WD Bremers, Sam Lee, **Fanjun Bu**, Hiroshi Yasuda, Wendy Ju. “XR-OOM: MiXed Reality driving simulation with real cars for research and design”. In: *Proceedings of the 2022 CHI Conference on Human Factors in Computing Systems*. 2022, pp. 1–13.

Jan Ondras, Abrar Anwar, Tong Wu, **Fanjun Bu**, Malte Jung, Jorge Jose Ortiz, Tapomayukh Bhattacharjee. “Human-robot commensality: Bite timing prediction for robot-assisted feeding in groups”. In: *6th Annual Conference on Robot Learning*. 2022.

Fanjun Bu, Chien-Ming Huang. “Object permanence through audio-visual representations”. In: *IEEE Access* 9 (2021), pp. 131574–131582.

Konstantinos Chatzilygeroudis, Bernardo Fichera, Ilaria Lauzana, **Fanjun Bu**, Kunpeng Yao, Farshad Khadivar, Aude Billard. “Benchmark for bimanual robotic manipulation of semi-deformable objects”. In: *IEEE Robotics and Automation Letters* 5.2 (2020), pp. 2443–2450.

Shima Rahimi Moghaddam, **Fanjun Bu**, Christopher J Honey. “Learning Representations from Temporally Smooth Data”. In: *arXiv preprint arXiv:2012.06694* (2020).

In Submission **Fanjun Bu**, Kerstin Fischer, Wendy Ju. “Making Sense of Robots in Public Spaces: A Study of Trash Barrel Robots”. In: *ACM Transactions on Human-Robot Interaction* (2024).

Demos and Videos **Fanjun Bu**, Ilan Mandel, Wen-Ying Lee, Wendy Ju. “Trash Barrel Robots in the City”. In: *Companion of the 2023 ACM/IEEE International Conference on Human-Robot Interaction*. HRI ’23. Stockholm, Sweden: Association for Computing Machinery, 2023, pp. 875–877. I S B N: 9781450399708.

O T H E R S

- Academic Service Associate Editor for International Conference on Social Robotics +AI (2024)
- Press Sarah Marquart, "Virtual, Mixed Realities Converge in New Driving Simulator", Cornell Chronicle, Jun 21, 2024
- Abby Hughes, "New Yorkers treat these remote-controlled 'robot' garbage bins like people, say researchers", CBC Radio, August 4, 2023
- Catalina Gonella, "These 'trash bots' have been helping keep Brooklyn's Albee Square clean", Gothamist, August 2, 2023
- Roger Clark, "Robots helping keep Downtown Brooklyn clean," Spectrum News NY1, August 1, 2023
- Patricia Waldron, "(Almost) everyone likes a helpful trash robot," Cornell Chronicle, April 19, 2023.
- Ayesha Rascoe, "Researchers released robot trash cans in NYC to see how people would react," National Public Radio (NPR), April 16, 2023.
- Mike Snider, "Robots in the Big Apple: Robo-trash cans patrolling New York plaza make friends, creep out some," USA TODAY, April 15, 2023.
- Staff, "These robotic trash cans were filmed to test human-robotic interactions. Watch what happened," CNN Business, April 12, 2023.
- Evan Ackerman, "Humans (Mostly) Love Trash Robots > Simple robots wander NYC asking for trash and recycling, and it's adorable," IEEE Spectrum, Mar 10, 2023