Kayleigh "Kaleb" Bishop

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Research Interests

I am interested in researching embodied computational models of human behavior, especially perceptual, linguistic, and social skills. Using knowledge of how humans perceive and operate on the world and the social beings around them can inform the creation of more intelligent, adaptive, and communicative systems. I am particularly interested in the potential application of these skills in the creation of **socially assistive robotics** and **cognitively supportive AI systems**. My other interests include human-robot interaction, natural language processing, artificial intelligence, and social learning across cultures.

Education

University of Colorado at Boulder — Boulder, CO
Ph.D. in Computer Science — Fall 2020 —Current
Advisors: Bradley Hayes & Alessandro Roncone

University of Colorado at Boulder — Boulder, CO
M.S. in Computer Science, GPA: 4.00/4.00 — 2025

- Thesis presentation: *Natural language support for task handover*

Yale University — New Haven, CT
B.S. in Cognitive Science, GPA: 3.92/4.00 — 2020

- Graduated Magna Cum Laude, with Honors in the Cognitive Science Major
- Thesis: *Towards Flexible Referring Expression Generation for a Collaborative Robot*, Advisor Brian Scassellati

Scholarships and Awards

- Chancellor's Graduate Fellowship, University of Colorado at Boulder — 2020
  - Exclusive fellowship providing 2 years of funding to incoming Ph.D. students, awarded by faculty nomination only by the Graduate School.
- Richard U. Light Fellowship, Yale University — 2018
  - Summer funding award for immersive language study in East Asia for students intending to apply language study to their future studies and careers; awarded for 10 weeks of intensive language study at Seoul National University in Seoul, Republic of Korea.

Research Positions

University of Colorado at Boulder — Boulder, CO
Graduate Research Assistant — Fall 2020—Current

- Collaborative AI and Robotics Lab, PI: Bradley Hayes, 2020-present
- NSF AI Institute for Student-AI Teaming, 2020-2022
- Human Interaction & Robotics Group, PI: Alessandro Roncone, 2020-2025

Projects led as part of my research involvement at CU Boulder include the development of a social interaction & tutoring ROS stack for the Misty robot, and creating a prototype LLM-enabled supportive agent for facilitating information transfer at end-of-shift handoffs.

Yale University New Haven, CT
Undergraduate Research Assistant 2017—2020
Yale Social Robotics Lab, PI: Brian Scassellati

Assisted in programming, data collection, and analysis on several human-robot interaction studies.

Publications

[1] J. Brawer, K. Bishop, B. Hayes, and A. Roncone, "Towards a natural language interface for flexible multi-agent task assignment", in *Proceedings of the AAAI Symposium Series*, vol. 2, 2023, pp. 167–171.

[2] Y.-S. Tung, K. Bishop, B. Hayes, and A. Roncone, "Bilevel optimization for just-in-time robotic kitting and delivery via adaptive task segmentation and scheduling", in *2022 31st IEEE International Conference on Robot and Human Interactive Communication (RO-MAN)*, 2022, pp. 524–531.

[3] K. Bishop, B. Hayes, and A. Roncone, "Teaching grounded reading skills via an interactive robot tutor", presented at the Workshop on Robots for Learning, 2021 ACM International Conference on Human-Robot Interaction, Mar. 2021.

Teaching

- **CSCI 1300: Starting Computing**, University of Colorado Boulder TA | Fall 2021; Fall 2025
  Designed course content, taught weekly review and lab sections for 40-70 students, hosted office hours, and managed course admin & student communication. Received consistently positive feedback from students on teaching and inclusivity.
- **Online Experiences for Yale Scholars (ONEXYS): Mathematics**, Yale University Team leader | 2017
  Taught college math fundamentals on a daily basis for group of 8 incoming Yale students from low-income backgrounds in a 10-week summer intensive course.

Service & Mentorship

- **Committee Chair**, Graduate Advisory Committee on AI & Education, College of Engineering and Applied Science, University of Colorado Boulder 2025—present
  Chair of interdepartmental advisory committee performing internal research, documenting best practices, and organizing educational talks for students and faculty on AI's involvement in engineering curricula at the College.
- **Executive Committee**, NSF AI Institute for Student-AI Teaming 2021—2022
  Graduate student representative on Executive Committee for NSF-funded cross-disciplinary AI Research institute. Involved in monthly committee meetings on institute research agenda and administrative concerns.
- **McNair Scholars Program Mentor** at CU Boulder 2021—2022
  Volunteer mentor providing ad-hoc counseling for undergraduates in the CU chapter of the McNair Scholars program, which serves college students from underrepresented backgrounds who aspire to attain a doctoral degree.
- **First-year Counselor** at Yale University 2019—2020
  Academic and residential advisor to 10 first-year students.
- **Senior Advising Fellow** at Matriculate 2018—2020
  Volunteer college counselor for high-achieving low-income high school students. Received Advising Certification in 2018; mentored 3 advisees on a biweekly basis from 11th grade through college matriculation.