

ANDREA BAJCSY

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POSITION	Postdoctoral Scholar University of California, Berkeley Advisor: Jitendra Malik	Fall 2022 - 2023
	Assistant Professor Robotics Institute, Carnegie Mellon University	Fall 2023
EDUCATION	University of California, Berkeley Ph.D. in Electrical Engineering and Computer Science Advisors: Anca D. Dragan & Claire J. Tomlin Thesis: <i>Bridging Safety and Learning in Human-Robot Interaction</i>	Summer 2022
	University of Maryland, College Park B.S. in Computer Science, Minor in Mathematics	2012 - 2016
INTERNSHIPS	NVIDIA Research Autonomous Vehicles Research Scientist Intern	Spring 2021
	Max Planck Institute for Intelligent Systems Autonomous Motion Group Research Intern	Summer 2016
JOURNAL ARTICLES	<p>[J1] Physical Interaction as Communication: Learning Robot Objectives Online from Human Corrections. D.P. Losey, A. Bajcsy, M.K. O'Malley, A.D. Dragan. <i>International Journal of Robotics Research (IJRR)</i>, 2021.</p> <p>[J2] Efficient Dynamics Estimation with Adaptive Model Sets. E. Ratner, A. Bajcsy, C.J. Tomlin, A.D. Dragan. <i>IEEE Robotics and Automation Letters (RA-L)</i>, 2021.</p> <p>[J3] A Robust Control Framework for Human Motion Prediction. A. Bajcsy, S. Bansal, E. Ratner, C.J. Tomlin, A.D. Dragan. <i>IEEE Robotics and Automation Letters (RA-L)</i>, 2020.</p> <p>[J4] Quantifying Hypothesis Space Misspecification in Learning from Human-Robot Demonstrations and Physical Corrections. A. Bobu, A. Bajcsy, J.F. Fisac, S. Deglurkar, A.D. Dragan. <i>IEEE Transactions on Robotics (T-RO)</i>, 2020. (Honorable Mention for the 2020 IEEE T-RO Best Paper Award)</p> <p>[J5] Confidence-Aware Motion Prediction for Real-Time Collision Avoidance. D. Fridovich-Keil*, A. Bajcsy*, J.F. Fisac, S.L. Herbert, S. Wang, A.D. Dragan, C.J. Tomlin. <i>International Journal of Robotics Research (IJRR)</i>, 2019.</p> <p>[J6] A User-Centered Design and Analysis of an Electrostatic Haptic Touchscreen System for Students with Visual Impairments. A. Bateman, O. Zhao, A. Bajcsy, M. Jennings, B. Toth, A. Cohen, E. Horton, A. Khatrar, R. Kuo, F. Lee, M.K. Lim, L. Migasiuk, R. Renganathan, A. Zhang, M.A. Oliveira. <i>International Journal of Human-Computer Studies</i>, 2017.</p>	

* indicates equal contribution.

CONFERENCE
PUBLICATIONS

- [C1] **Towards Modeling and Influencing the Dynamics of Human Learning.**
R. Tian, M. Tomizuka, A.D. Dragan, A. Bajcsy.
International Conference on Human-Robot Interaction (HRI), 2023.
- [C2] **Towards Robots that Influence Humans over Long-Term Interaction.**
S. Sagheb, Y. Mun, N. Ahmadian, B.A. Christie, A. Bajcsy, K. Driggs-Campbell,
D.P. Losey.
International Conference on Robotics and Automation (ICRA), 2023.
- [C3] **Safety Assurances for Human-Robot Interaction via Confidence-aware Game-theoretic Human Models.**
R. Tian*, L. Sun*, A. Bajcsy*, M. Tomizuka, A.D. Dragan.
International Conference on Robotics and Automation (ICRA), 2022.
- [C4] **Analyzing Human Models that Adapt Online.**
A. Bajcsy, A. Siththaranjan, C.J. Tomlin, A.D. Dragan.
International Conference on Robotics and Automation (ICRA), 2021.
- [C5] **A Hamilton-Jacobi Reachability-Based Framework for Predicting and Analyzing Human Motion for Safe Planning.**
S. Bansal*, A. Bajcsy*, E. Ratner*, A.D. Dragan, C.J. Tomlin.
Conference on Robotics and Automation (ICRA), 2020.
- [C6] **An Efficient Reachability-Based Framework for Provably Safe Autonomous Navigation in Unknown Environments.**
A. Bajcsy*, S. Bansal*, E. Bronstein, V. Tolani, C.J. Tomlin.
Conference on Decision and Control (CDC), 2019.
- [C7] **A Scalable Framework For Real-Time Multi-Robot, Multi-Human Collision Avoidance.**
A. Bajcsy*, S.L. Herbert*, D. Fridovich-Keil, J.F. Fisac, S. Deglurkar, A.D. Dragan, C.J. Tomlin.
International Conference on Robotics and Automation (ICRA), 2019.
- [C8] **Learning Under Misspecified Objective Spaces.**
A. Bobu, A. Bajcsy, J.F. Fisac, A.D. Dragan.
Conference on Robot Learning (CoRL), 2018.
(invited to special issue)
- [C9] **Probabilistically Safe Robot Planning with Confidence-Based Human Predictions.**
J.F. Fisac*, A. Bajcsy*, S.L. Herbert, D. Fridovich-Keil, S. Wang, C.J. Tomlin, A.D. Dragan.
Robotics: Science and Systems (RSS), 2018.
(invited to special issue)
- [C10] **Learning from Physical Human Corrections, One Feature at a Time.**
A. Bajcsy, D.P. Losey, M.K. O'Malley, A.D. Dragan.
International Conference on Human-Robot Interaction (HRI), 2018.
- [C11] **Learning Robot Objectives from Physical Human Robot Interaction.**
A. Bajcsy*, D.P. Losey*, M.K. O'Malley, A.D. Dragan.
Conference on Robot Learning (CoRL), 2017.
(oral, acceptance rate 10%)
- [C12] **A Review of Principles in Design and Usability Testing of Tactile Technology for Individuals with Visual Impairments.**
E.L. Horton, R. Renganathan, B.N. Toth, A.J. Cohen, A.V. Bajcsy, A. Bateman, M.C. Jennings, A. Khattar, R.S. Kuo, F.A. Lee, M.K. Lim, L.W. Migasiuk, A. Zhang, O.K. Zhao, M.A. Oliveira.
Assistive Technology, 2016.

- [C13] **Systematic Measurement of Marginal Mark Types on Voting Ballots.**
A. Bajcsy, Y.S. Li-Baboud, M. Brady.
NIST IR 8069, 2015.
- [C14] **Depicting Web Images for the Blind and Visually Impaired.**
A. Bajcsy, Y.S. Li-Baboud, M. Brady.
SPIE Newsroom, 2013.
- PRE-PRINTS [P1] **Towards the Unification and Data-Driven Synthesis of Autonomous Vehicle Safety Concepts.**
K. Leung*, A. Bajcsy*, E. Schmerling, M. Pavone.
arXiv: <https://arxiv.org/abs/2107.14412> , 2022.
- WORKSHOP PUBLICATIONS [W1] **Introspective Human Motion Prediction for Safe Robot Autonomy.**
A. Bajcsy.
[RSS Pioneers](#), RSS, 2020.
- [W2] **A Robust Control Framework for Intent-Driven Human Motion Prediction.**
A. Bajcsy, S. Bansal, E. Ratner, C.J. Tomlin, A.D. Dragan.
[Interaction and Decision-Making in Autonomous-Driving](#), ICRA, 2020.
- TEACHING **CS188: Introduction to Artificial Intelligence** Fall 2020
UC Berkeley, Graduate Student Instructor.
Taught a weekly one-hour discussion section, held weekly office hours.
- EE221A: Linear Systems Theory** Fall 2019
UC Berkeley, Graduate Student Instructor.
Taught weekly two-hour discussion section for 50 PhD, masters, and undergraduate students. Graded homework, exams, and held office hours.
- CMSC131: Object-Oriented Programming** Spring 2014
University of Maryland, Undergraduate Teaching Assistant.
Taught a weekly one-hour discussion section of 30 students and held office hours.
- HONORS & AWARDS **Rising Stars Academic Career Workshop in EECS** 2021
Selective, intensive workshop for historically marginalized graduate students and postdocs interested in pursuing academic careers in EE, CS, AI, and decision-making.
- Honorable Mention for the 2020 IEEE T-RO Best Paper Award** 2020
For the paper “Quantifying Hypothesis Space Misspecification in Learning from Human-Robot Demonstrations and Physical Corrections”
- Robotics: Science and Systems (RSS) Pioneers** 2020
Selected for workshop bringing together top early career researchers in robotics.
- National Science Foundation Graduate Research Fellowship** 2016
Three-year research fellowship of \$34,000 yearly for graduate students in STEM.
- Berkeley EECS Excellence Award** 2016
One-year fellowship of \$26,000 during the academic year, \$4,000 over the summer.
- Student Researchers of the Year Award**, University of Maryland 2016
Awarded to five undergrad researchers in all disciplines at University of Maryland.
- CRA Outstanding Undergraduate Research Award Honorable Mention** 2015
- Brendan Iribe Scholar**, University of Maryland 2015
Awarded yearly to one undergraduate student in Computer Science.
- INVITED TALKS **Practical Safety Assurances for Dynamic Human-Robot Interactions**

Multi-Agent RL Reading Group , University of Maryland College Park	2023
EE-599: Special Topics on Safety, University of Southern California	2023
ELE 539: Safety-Critical Robotic Systems Class, Princeton University	2022
Nuro , Mountain View	2022
Workshop on Safe Learning for Autonomous Driving (SL4AD) , ICML	2022

Bridging Safety and Learning in Human-Robot Interaction

Robotics Seminar, University of Illinois Champaign-Urbana	2023
Robotics Seminar, University of Wisconsin-Madison	2023
Department Seminar, Carnegie Mellon University	2022
Department Seminar, Northwestern University	2022
Department Seminar, Brown University	2022
Department Seminar, Georgia Tech	2022
Department Seminar, University of Washington	2022
Department Seminar, University of Pennsylvania	2022
Department Seminar, Harvard	2022
Department Seminar, MIT	2022
Department Seminar, UC Santa Barbara	2022
Department Seminar, University of Michigan	2022
Department Seminar, Cornell	2022
Department Seminar, UC Los Angeles	2022
Frontiers in CMS Symposium , Caltech	2022
Multi-Agent Reinforcement Learning Seminar , UC Berkeley	2022
Robotics Colloquium , University of Washington	2021
MAE 207: Safety for Autonomous Systems , University of California San Diego	2021

Analyzing Human Models that Adapt Online

Intelligent Control Lab , Carnegie Mellon University	2021
George Pappas Laboratory, University of Pennsylvania	2021

Introspective Human Motion Prediction for Safe Robot Autonomy

CS188: Introduction to Artificial Intelligence , UC Berkeley	2020
Autonomy Talks , ETH Zurich	2020
Sam Burden Laboratory, University of Washington	2020
Robotics Seminar , Stanford University	2020

Safe Robots Which Learn From (and About) Humans

AI4ALL , UC Berkeley	2021
BAIR / Transfer-to-Excellence REU , UC Berkeley	2021
Innovative Robotics Symposium , University of Chicago Laboratory School	2020

An Efficient Reachability-Based Framework for Provably Safe Autonomous Navigation in Unknown Environments

	ELE 539: Safety-Critical Robotic Systems Class , Princeton University	2020
	A Robust Control Framework for Human Motion Prediction	
	Berkeley DeepDrive , UC Berkeley	2020
	Confidence-Aware Motion Prediction for Real-time Collision Avoidance	
	Robotics Seminar , Northwestern University	2019
	Intelligent Systems Division , National Institute for Standards and Technology (NIST)	2019
	Long-Term Human Motion Prediction Workshop , ICRA	2019
	Probabilistically Safe Robot Planning with Confidence-Based Human Predictions	
	Berkeley Artificial Intelligence Research (BAIR) Seminar Series , UC Berkeley	2018
	Learning Robot Objectives from Physical Human-Robot Interaction	
	CS287H: Algorithmic Foundations of Human-Robot Interaction , UC Berkeley	2021
	Bay Area Robotics Symposium (BARS) , UC Berkeley	2017
	Berkeley DeepDrive , UC Berkeley	2017
RESEARCH MENTORSHIP	Ran (Thomas) Tian (PhD student at UC Berkeley)	2021 - Present
	Neerja Thakkar (PhD student at UC Berkeley)	2022 - Present
	Jingqi Li (PhD student at UC Berkeley)	2022 - Present
	Regina Wang (now Master's student at Stanford)	2021 - Present
	Anand Siththaranjan (PhD student at UC Berkeley)	2019 - Present
	Charles Tang (now software engineer at Applied Intuition)	2019 - 2021
	Sampada Deglurkar (now PhD student at UC Berkeley)	2018 - 2020
	Eli Bronstein (now software engineer at Waymo Research)	2019
PH.D COMMITTEES	Benjamin Newman (CMU)	2023
OUTREACH	Machine learning @ Berkeley	2021
	Invited talk on human motion prediction for the Berkeley undergraduates.	
	creAltivity	2021
	Invited talk at the AI Ethics Lab to students from underrepresented backgrounds.	
	BAIR & Transfer-To-Excellence REU	2021 - 2022
	Mentoring and invited talks.	
	AI4ALL mentor and speaker	2020 - 2022
	Summer camp on AI for underrepresented high school students	
	Berkeley Artificial Intelligence Research mentor	2019
	Mentoring underrepresented students in research and career planning	
	Girls in Engineering Camp	2018 - 2019
	Taught summer camp students about self-driving cars	
	Girl Scouts Engineering Fun Day	2018
PROFESSIONAL ACTIVITIES	Conference Associate Editor	

ICRA: IEEE International Conference on Robotics and Automation	2023
L4DC: Learning for Decision and Control	2023

Organizing Committee

RSS: Robotics Science & Systems	2023
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External Reviewer

RSS: Robotics: Science and Systems
RA-L: IEEE Robotics and Automation Letters
T-RO: IEEE Transactions on Robotics
IROS: IEEE International Conference on Intelligent Robots and Systems
ICRA: IEEE International Conference on Robotics and Automation
HRI: IEEE International Conference on Human-Robot Interaction
AuRo: Autonomous Robots
CoRL: Conference on Robot Learning
ICCPs: IEEE International Conference on Cyber-Physical Systems
ACC: American Control Conference
AAAI: Association for the Advancement of Artificial Intelligence

Workshops & Seminars

4th Workshop on Long-term Human Motion Prediction	2022
Robotics for People: Perspectives on Interaction, Learning, and Safety	2021
RSS Pioneers	2021
3rd Workshop on Long-term Human Motion Prediction	2021
UC Berkeley DREAM/CPAR Seminar	2019 - 2021
2nd Workshop on Robust Autonomy	2020
Robust Autonomy: Safe Robot Learning and Control in Uncertain Real-World Environments	2019
UC Berkeley Semiautonomous Seminar	2018 - 2019

March 24, 2023