

ANDREA BAJCSY

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POSITION	Postdoctoral Scholar	University of California, Berkeley	Fall 2022 - 2023
		Advisor: Jitendra Malik	
	Assistant Professor	Robotics Institute, Carnegie Mellon University	Fall 2023
EDUCATION	University of California, Berkeley	Ph.D. in Electrical Engineering and Computer Science	Summer 2022
		Advisors: Anca D. Dragan & Claire J. Tomlin Thesis: <i>Bridging Safety and Learning in Human-Robot Interaction</i>	
	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	[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.	
	[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.	
	[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.	
	[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)	
	[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.	
	[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. Khattar, 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.	
CONFERENCE PUBLICATIONS	[C1]	Towards Modeling and Influencing the Dynamics of Human Learning R. Tian, M. Tomizuka, A.D. Dragan, A. Bajcsy. <i>International Conference on Human-Robot Interaction (HRI)</i> , 2023.	

* indicates equal contribution.

- [C2] **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.
- [C3] **Analyzing Human Models that Adapt Online.**
A. Bajcsy, A. Siththaranjan, C.J. Tomlin, A.D. Dragan.
International Conference on Robotics and Automation (ICRA), 2021.
- [C4] **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.
- [C5] **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.
- [C6] **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.
- [C7] **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)
- [C8] **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)
- [C9] **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.
- [C10] **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%)
- [C11] **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.
- [C12] **Systematic Measurement of Marginal Mark Types on Voting Ballots.**
A. Bajcsy, Y.S. Li-Baboud, M. Brady.
NIST IR 8069, 2015.
- [C13] **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.

- [P2] **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.
arXiv: <https://arxiv.org/abs/2209.10588> , 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 Iribé Scholar**, University of Maryland 2015
Awarded yearly to one undergraduate student in Computer Science.
- INVITED TALKS **Practical Safety Assurances for Dynamic Human-Robot Interactions**
- 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**
- 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
	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.	
	creAIivity	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
	External Reviewer	
	RSS: Robotics: Science and Systems	
	RA-L: IEEE Robotics and Automation Letters	
	T-RO: IEEE Transactions on Robotics	
	IRO: 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

January 7, 2023