

EDUCATION

- **Stanford University** Stanford, CA
PhD Candidate in Electrical Engineering; GPA: 4.07/4.00 *Sep 2017 – present*
Advisor: Prof. Dorsa Sadigh
- **Stanford University** Stanford, CA
Master of Science in Electrical Engineering; GPA: 4.08/4.00 *Sep 2017 – Apr 2019*
- **Bilkent University** Ankara, Turkey
Bachelor of Science in Electrical and Electronics Engineering; GPA: 4.00/4.00 *Aug 2012 – June 2017*
Rank: 1/170 based on GPA
- **National University of Singapore** Singapore
Exchange Student in Electrical and Computer Engineering *Aug 2015 – Dec 2015*

HONORS & AWARDS

- **Stanford CS Outstanding Course Assistant:** Awarded to the top 5% of CAs in the department. Awarded for the “Principles of Robot Autonomy II” course in Winter 2021.
- **Qualcomm Innovation Fellowship 2020 North America:** Finalist (as a group of two PhD students)
- **HRI 2020 Honorable Mention:** Awarded for the paper “When Humans Aren’t Optimal: Robots that Collaborate with Risk-Aware Humans”
- **Qualcomm Innovation Fellowship 2019 North America:** Finalist (as a group of two PhD students)
- **Stanford University James D. Plummer Graduate Fellowship (2017-2018):** Full tuition waiver & stipend during the first year of PhD program
- **Bilkent University Electrical and Electronics Engineering Department, Graduation Awards (2017):** Academic Excellence, Research Excellence, Voluntary Professional Activities, Social Awareness and Activities
- **Scholarship of the Turkish Prime Ministry (2012-2017):** Awarded monthly stipend during the BSc program (given to those who rank in first 100 among 1.8 million students in nationwide university entrance exam)
- **Bilkent University Comprehensive Scholarship (2012-2017):** Full tuition waiver & stipend during the BSc program
- **IEEEExtreme Programming Competitions:** 2nd in Turkey, 78th among all participants, 2015. 1st in Turkey, 73rd among all participants, 2014. 1st in Turkey, 100th among all participants, 2013 (All as a group of three students)
- **Turkish Intelligence Foundation (TZV) Marathon:** Ranked twice in top 25 and once 6th, 2012-2014
- **İşbank Golden Youth Award (2012):** Granted for outstanding performance in the nationwide university entrance exam
- **Nationwide University Entrance Exam (LYS):** Ranked 13th among 1.8 million students in Turkey, 2012

WORK EXPERIENCE

- **Google Research** Mountain View, CA, USA
Research Intern *Jun 2021 - Sep 2021*
 - **Preference-based Learning:** Working on developing preference-based reinforcement learning algorithms.
- **National Magnetic Resonance Research Center (UMRAM)** Ankara, Turkey
Undergraduate Researcher & Research Intern *Apr 2016 - Sep 2017*
 - **csMRI:** Developing compressed sensing methods for accelerated MRI under the supervision of Prof. Tolga Çukur
 - **SSFP Imaging:** Developing coil compression methods and artifact suppression techniques for balanced SSFP under the supervision of Prof. Tolga Çukur

- **ASELSAN** Ankara, Turkey
Intern (2015), Research Engineer (2017) *June 2015 - July 2015, Apr 2017 - Aug 2017*
 - **Military Communications (2015)**: Developing a C++ program to decode and encode data in MIL-STD-3014 protocol with an easy-to-use interface
 - **Algorithms Design (2015)**: Designing algorithms to solve composite launch acceptability region problem
 - **SSFP Imaging (2017)**: R&D projects related to field inhomogeneity, banding profile estimation, coil compression and banding suppression in bSSFP MRI under the supervision of Dr. Aykut Koç
- **École polytechnique fédérale de Lausanne (EPFL)** Lausanne, Switzerland
Research Intern, Summer@EPFL Program *June 2016 - Sep 2016*
 - **Approximate Message Passing**: Research about approximate message passing algorithms as an intern in the Information Processing Group under the supervision of Prof. Rüdiger Urbanke
- **Anadolu Agency** Ankara, Turkey
Intern *June 2014 - July 2014*
 - **Image Processing**: Developing a Java, C++ and MySQL based program that uses image registration, matching and comparison techniques to detect copyright infringements

TEACHING EXPERIENCE

- **Stanford University** Stanford, CA
Teaching Assistant *Winter 2020, Winter 2021*
 - **CS237B / EE260B / AA174B / AA274B Principles of Robot Autonomy II**: Holding office hours and sections, preparing and grading homeworks and exams
Awarded “outstanding course assistant” by the CS department (top 5%) in Winter 2021
- **Bilkent University** Ankara, Turkey
Teaching Assistant *Spring 2014, Fall 2016*
 - **CS114 Introduction to Programming for Engineers (2014)**: Teaching in the weekly tutorials & recitations
 - **EEE211 Analog Electronics (2016)**: Teaching, interviewing and grading students in the laboratory sessions

JOURNAL PUBLICATIONS

1. **E Biyik**, N Anari, D Sadigh. “Batch Active Learning of Reward Functions from Human Preferences”, The International Journal of Robotics Research (IJRR), 2021. (*Submitted*)
2. DA Lazar*, **E Biyik***, D Sadigh, R Pedarsani (*equal contribution). “Learning How to Dynamically Route Autonomous Vehicles on Shared Roads”, Transportation Research Part C: Emerging Technologies (TRC), 2021.
3. **E Biyik***, DA Lazar*, R Pedarsani, D Sadigh (*equal contribution). “Incentivizing Efficient Equilibria in Traffic Networks with Mixed Autonomy”, IEEE Transactions on Control of Network Systems (TCNS), 2021; doi: 10.1109/TCNS.2021.3084045.
4. **E Biyik**, DP Losey, M Palan, NC Landolfi, G Shevchuk, D Sadigh. “Learning Reward Functions from Diverse Sources of Human Feedback: Optimally Integrating Demonstrations and Preferences”, The International Journal of Robotics Research (IJRR), 2020. (*Submitted*)
5. **E Biyik***, K Keskin*, SUH Dar, A Koc, T Çukur (*equal contribution). “Factorized sensitivity estimation for artifact suppression in phase-cycled bSSFP MRI”, NMR in Biomedicine, 2020; doi: 10.1002/nbm.4228.
6. **E Biyik**, E Ilicak, T Çukur. “Reconstruction by Calibration over Tensors for Multi-Coil Multi-Acquisition Balanced SSFP Imaging”, Magnetic Resonance in Medicine (MRM), 2017; doi: 10.1002/mrm.26902.
7. E Ilicak, LK Senel, **E Biyik**, T Çukur. “Profile-encoding reconstruction for multiple-acquisition balanced steady-state free precession imaging”, Magnetic Resonance in Medicine (MRM), 2016; doi: 10.1002/mrm.26507.

8. Z Cao, **E Bıyık**, G Rosman, D Sadigh. “Leveraging Temporal Structures in Attention for Multi-Agent Trajectory Prediction”, IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), Prague, Czech Republic, Sep. 2021. (*Submitted*)
9. S Katz*, A Maleki*, **E Bıyık**, MJ Kochenderfer (*equal contribution). “Preference-based Learning of Reward Function Features”, IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), Prague, Czech Republic, Sep. 2021. (*Submitted*)
10. WZ Wang*, M Beliaev*, **E Bıyık***, DA Lazar, R Pedarsani, D Sadigh (*equal contribution). *Emergent Prosociality in Multi-Agent Games Through Gifting*, 30th International Joint Conference on Artificial Intelligence (IJCAI), Montreal, Quebec, Canada, Aug. 2021.
11. K Li, M Tucker, **E Bıyık**, E Novoseller, JW Burdick, Y Sui, D Sadigh, Y Yue, AD Ames. “ROIAL: Region of Interest Active Learning for Characterizing Exoskeleton Gait Preference Landscapes”, 2021 IEEE International Conference on Robotics and Automation (ICRA), Xi’an, China, May 2021.
12. M Beliaev, **E Bıyık**, DA Lazar, WZ Wang, D Sadigh, R Pedarsani. “Incentivizing Routing Choices for Safe and Efficient Transportation in the Face of the COVID-19 Pandemic”, 12th ACM/IEEE International Conference on Cyber-Physical Systems (ICCPS), Nashville, Tennessee, USA, May 2021; doi: 10.1145/3450267.3450546.
13. Z Zhu, **E Bıyık**, D Sadigh. “Multi-Agent Safe Planning with Gaussian Processes”, IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), Las Vegas, Nevada, USA, Oct. 2020; doi: 10.1109/IROS45743.2020.9341169.
14. **E Bıyık***, N Huynh*, MJ Kochenderfer, D Sadigh (*equal contribution). “Active Preference-Based Gaussian Process Regression for Reward Learning”, Robotics: Science and Systems (RSS), Corvallis, Oregon, USA, Jul. 2020; doi: 10.15607/rss.2020.xvi.041.
15. Z Cao*, **E Bıyık***, WZ Wang, A Raventos, A Gaidon, G Rosman, D Sadigh (*equal contribution). “Reinforcement Learning based Control of Imitative Policies for Near-Accident Driving”, Robotics: Science and Systems (RSS), Corvallis, Oregon, USA, Jul. 2020; doi: 10.15607/rss.2020.xvi.039
16. M Kwon, **E Bıyık**, A Talati, K Bhasin, DP Losey, D Sadigh. “When Humans Aren’t Optimal: Robots that Collaborate with Risk-Aware Humans”, ACM/IEEE International Conference on Human-Robot Interaction (HRI), Cambridge, United Kingdom, Mar. 2020; doi: 10.1145/3319502.3374832. *Honorable mention award*.
17. **E Bıyık**, DA Lazar, D Sadigh, R Pedarsani. “The Green Choice: Learning and Influencing Human Decisions on Shared Roads”, 58th IEEE Conference on Decision and Control (CDC), Nice, France, Dec. 2019; doi: 10.1109/CDC40024.2019.9030169.
18. C Basu, **E Bıyık**, Z He, M Singhal, D Sadigh. “Active Learning of Reward Dynamics with Hierarchical Queries”, IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), Macau, China, Nov. 2019; doi: 10.1109/IROS40897.2019.8968522.
19. **E Bıyık**, M Palan, NC Landolfi, DP Losey, D Sadigh. “Asking Easy Questions: A User-Friendly Approach to Active Reward Learning”, 3rd Conference on Robot Learning (CoRL), Osaka, Japan, Oct. 2019.
20. **E Bıyık***, J Margoliash*, SR Alimo, D Sadigh (*equal contribution). “Efficient and Safe Exploration in Deterministic Markov Decision Processes with Unknown Transition Models”, American Control Conference (ACC), Philadelphia, Pennsylvania, USA, Jul. 2019; doi: 10.23919/ACC.2019.8815276.
21. **E Bıyık***, DA Lazar*, R Pedarsani, D Sadigh (*equal contribution). “Altruistic Autonomy: Beating Congestion in Shared Roads”, Workshop on Algorithmic Foundations of Robotics (WAFR), Mérida, México, Dec. 2018.
22. **E Bıyık**, D Sadigh. “Batch Active Preference-Based Learning of Reward Functions”, 2nd Conference on Robot Learning (CoRL), Zürich, Switzerland, Oct. 2018.
23. HC Baykara*, **E Bıyık***, G Gül*, D Onural*, AS Öztürk*, İ Yıldız* (*equal contribution). “Real-Time Detection, Tracking and Classification of Multiple Moving Objects in UAV Videos”, 29th IEEE International Conference on Tools with Artificial Intelligence (ICTAI), Boston, Massachusetts, USA, Nov. 2017; doi: 10.1109/ICTAI.2017.00145.
24. **E Bıyık**, J Barbier, M Dia. “Generalized Approximate Message-Passing Decoder for Universal Sparse Superposition Codes”, IEEE International Symposium on Information Theory (ISIT), Aachen, Germany, Jun. 2017; doi: 10.1109/ISIT.2017.8006798.

WORKSHOP PROCEEDINGS

25. M Beliaev*, WZ Wang*, DA Lazar, **E Bıyık**, D Sadigh, R Pedarsani (*equal contribution). “Emergent Correlated Equilibrium through Synchronized Exploration”, RSS 2020 Workshop on Emergent Behaviors in Human-Robot Systems, Jul. 2020.

26. **E Bıyık**, K Wang, N Anari, D Sadigh. “Batch Active Learning Using Determinantal Point Processes”, arXiv preprint arXiv:1906.07975, Jun. 2019.

INVITED TALKS & POSTER PRESENTATIONS

- Learning Preferences for Interactive Autonomy
 - Caltech Yisong Yue Lab (2021), oral presentation
 - UT Austin Personal Autonomous Robotics Lab (2021), oral presentation
 - UC Berkeley InterACT Lab (2021), oral presentation
- Learning how to Dynamically Route Autonomous Vehicles on Shared Roads
 - 3rd NorCal Control Workshop (2021), oral presentation
 - CARS - Center for Automotive Research at Stanford (2020), poster presentation
 - Stanford Robotics Lunch (2019), oral presentation
- Walking the Boundary of Learning and Interaction
 - 3rd Robot Learning Workshop: Grounding Machine Learning Development in the Real World @ NeurIPS 2020, oral presentation (with Dorsa Sadigh)
- When Humans Aren’t Optimal: Robots that Collaborate with Risk-Aware Humans
 - University of Chicago, Graduate Seminar on Topics in Human-Robot Interaction (2020), oral presentation (with Minae Kwon)
- Active Preference-Based Gaussian Process Regression for Reward Learning
 - RSS 2020, oral presentation
- The Green Choice: Learning and Influencing Human Decisions on Shared Roads
 - CDC 2019, oral presentation
- Active Learning of Reward Dynamics from Hierarchical Queries
 - IROS 2019, oral presentation
- Asking Easy Questions: A User-Friendly Approach to Active Reward Learning
 - CoRL 2019, poster presentation
- Efficient and Safe Exploration in Deterministic Markov Decision Processes with Unknown Transition Models
 - ACC 2019, oral presentation
 - Stanford AI Safety Retreat (2019), poster presentation
- Batch Active Preference-Based Learning of Reward Functions
 - CoRL 2018, oral presentation
 - Stanford HAI 2019, poster presentation
 - TRI Joint University Workshop 2019, poster presentation
 - Stanford SystemX Fall 2018, poster presentation
 - BARS - Bay Area Robotics Symposium (2018), poster presentation

- **Conferences Organized**

- **Local Arrangements Chair**, Bay Area Robotics Symposium (BARS), 2020
- **Organizer**, Emergent Behaviors in Human-Robot Systems (Workshop at Robotics: Science and Systems (RSS)), 2020
- **Local Arrangements Chair**, Bay Area Robotics Symposium (BARS), 2018

- **Area Chair**

- Responsible AI (RAI) (Workshop at International Conference on Learning Representations (ICLR)), 2021

- **Program Committee Member**

- Bridging AI and Cognitive Science (BAICS) (Workshop at International Conference on Learning Representations (ICLR)), 2020

- **Reviewer**

- Frontiers in Robotics and AI
- IEEE Robotics and Automation Letters (RA-L)
- IEEE Transactions on Robotics (T-RO)
- The International Journal of Robotics Research (IJRR)
- ACM Transactions on Human-Robot Interaction (THRI)
- IEEE Transactions on Automatic Control (TAC)
- IEEE Transactions on Neural Networks and Learning Systems (TNNLS)
- IEEE Transactions on Intelligent Transportation Systems (T-ITS)
- IEEE Control System Letters (L-CSS)
- IEEE Conference on Control Technology and Applications (CCTA), 2021
- Robotics: Science and Systems (RSS), 2020–2021
- IEEE International Conference on Robotics and Automation (ICRA), 2021
- ACM/IEEE International Conference on Human-Robot Interaction (HRI), 2020–2021
- American Control Conference (ACC), 2019, 2021
- IEEE-RAS International Conference on Humanoid Robots (Humanoids), 2020
- Conference on Robot Learning (CoRL), 2019–2020
- IEEE Conference on Decision and Control (CDC), 2019–2020
- IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), 2020
- Learning for Dynamics & Control (L4DC), 2020
- International Conference on Computer-Aided Verification (CAV), 2019
- ACM International Conference on Hybrid Systems: Computation and Control (HSCC), 2019
- ICRA Workshop on Social Intelligence in Humans and Robots, 2021

- **Stanford University AI Laboratory, 2018-present** Stanford, CA
 - **AI Mentorship Program Co-organizer (2018-present)**: Organizing the AI mentorship program in Stanford University Computer Science Department, and helping out with the related events
 - **AI Mentorship Program Mentor (2018-present)**: Mentoring first and second-year undergraduate students about their future career, getting involved in AI research, and applying for industry or graduate school
 - **Robotics Lunch Co-organizer (2019-2020)**: Organizing bi-weekly robotics lunch sessions where invited professors, postdoctoral researchers and PhD candidates present their research

- **Stanford STEM to SSTEM Summer Internship Program, 2019** Stanford, CA
 - **Mentor**: Mentoring high school students in a research project about decision making under time constraints

- **IEEE Bilkent Student Branch, 2012-2017** Ankara, Turkey
 - **Road to University Volunteer (2013-2017)**: Introducing engineering and campus life to high school students from all around Turkey
 - **Vice Chair (2014-2015)**: Managing and organizing the technical trainings and social events
 - **Robotics and Automation Society Member (2012-2015)**: Assistantship in the electronics and robotics focused tutorials
 - **Web Team Member (2012-2014) and Webmaster (2013-2014)**: Designing and managing the web site of IEEE Bilkent SB, its communities and events; teaching in web design tutorials and in MATLAB tutorials; organizing a Java programming competition and weekly brain teasers

- **GazeteBilkent, 2014-2017** Ankara, Turkey
 - **Online Operations Manager**: Managing the website of GazeteBilkent, an online newspaper

- **Bilkent University, 2014-2017** Ankara, Turkey
 - **Webmaster of Electrical and Electronics Engineering (2013-2017), Mechanical Engineering (2015-2017), Economics (2016-2017) Departments**: Designing, developing and managing the web sites of the departments and developing necessary web tools
 - **1st and 2nd Industrial Design Projects Fairs Student Coordinator and Webmaster (2015, 2016)**: Organizing the fair in which the senior students of Bilkent EEE present their industry projects
 - **Graduate Research Conference '15 Student Coordinator (2015)**: Organizing the conference series in which graduate students of Bilkent EEE present their research and projects
 - **Graduate Research Conference '14 Webmaster and Organization Team Member (2014)**: Organizing the conference series in which graduate students of Bilkent EEE present their research and projects

- **Bilkent Chess Society, 2013-2014** Ankara, Turkey
 - **Vice Chair**: Organizing tournaments on campus, participating in local events as a team

- **Bilkent Academic Career Club, 2013** Ankara, Turkey
 - **Physics Olympiads Volunteer**: Organizing a physics competition among high school students