

FETHİYE IRMAK DOĞAN

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OBJECTIVE	Deploying autonomous robots in human environments to facilitate people's lives
AREAS OF INTEREST	Human-Robot Interaction, Artificial Intelligence, Machine Learning, Deep Learning
EDUCATION	<p><i>Ph.D. in Computer Science, KTH Royal Institute of Technology</i> 01.2018-03.2023 – Thesis on <i>Robots That Understand Natural Lang. Inst. and Resolve Ambiguities</i></p> <p><i>M.Sc. in Computer Engineering, Middle East Technical University</i> 09.2015-01.2018 – Thesis on <i>Hierarchical Incremental Context Modeling on Robots</i> – Graduated with High Honor degree - CGPA: 3.93/4.00</p> <p><i>B.Sc. in Computer Engineering, Middle East Technical University</i> 09.2010-06.2015 – Graduated with Honor degree - CGPA: 3.40/4.00</p>
EMPLOYMENT, EXPERIENCE AND PROJECTS	<p>Postdoctoral researcher at University of Cambridge, UK 04.2024-present – Human behavior analysis for socially appropriate and adaptive human-robot interaction with Prof. Hatice Gunes</p> <p>Postdoctoral researcher at KTH Royal Institute of Technology 03.2023-04.2024 – Continual learning for robots in human environments leveraging explainability to help people with their daily tasks, working with Prof. Iolanda Leite</p> <p>Doctoral researcher at KTH Royal Institute of Technology 01.2018-03.2023 – Follow-up clarification techniques (semantic or visual) for robots to resolve ambiguities in user instructions, supervised by Prof. Iolanda Leite</p> <p>Visiting scholar at Georgia Institute of Technology, USA 11.2021-04.2022 – Developing a semantically-driven disambiguation method to handle ambiguous user requests with clarifying questions, supervised by Prof. Sonia Chernova</p> <p>Participating in Oxford Machine Learning Summer School 07.2021-08.2021 – Selected to participate in the highly selective summer school (~ 15% acceptance rate) for best-in-class training on machine learning and deep learning</p> <p>Participating in Amazon Alexa Prize, KTH Fantom Team 02.2018-08.2018 – Selected as one of 8 teams among the applicants from leading 195 universities to create a social bot, supervised by Prof. Gabriel Skantze</p> <p>Researcher at Middle East Technical University, Turkey 09.2015-01.2018 – Incremental context modeling for robots to make them capable of adapting to challenging real-world environments, supervised by Prof. Sinan Kalkan</p> <p><i>Senior Design Project at Middle East Technical University</i> 09.2014-06.2015 – 3D animation of fMRI data to visualize the cognitive processes in the brain, supervised by Prof. Fatos Tunay Yarman Vural</p> <p>Research intern at University of Southern Denmark 06.2014-09.2014 – A plugin providing a graphical user interface for automated calibration of UR robot arms, supervised by Prof. Norbert Krueger</p> <p>Research intern at Middle East Technical University 06.2013-09.2013 – Visualizing the 2D and 3D representations of the iCub robot's vision, supervised by Prof. Sinan Kalkan</p> <p>Part time software developer at Özgür Yazılım Company 02.2013-06.2013 – Taking a role in the development of the Tekir Accounting Program</p>
TEACHING	<p>Lecturer at KTH Royal Institute of Technology 10.2023-01.2024 – Master-level social robotics course</p> <p>Teaching Assistant at KTH Royal Institute of Technology 01.2019-03.2023 – Master-level machine learning course</p> <p>Teaching Assistant at Middle East Technical University 02.2014-06.2014 – C programming language course</p>

- MENTORING** *University of Cambridge* 04.2024-present
- *MS Students*: Hossein Rezaei
 - *BS Students*: Umut Ozyurt, Gizem Çınar
- KTH Royal Institute of Technology* 01.2019-present
- *PhD Students*: Ermanno Bartoli, and Anna Deichler
 - *MS Students*: Shipra Jain, Jiaming Huang, Amrita Panesar, Georgios Hadjiantonis, Aiman Shenawa, Francesca Cipelli, Beatriz Nogueira and Alexander Leszczynski
 - *Research Engineers*: Shreya Kohli, Rasmus Rudling, and Alex Sleat
 - *High School Intern*: Erik Eriksson
- Georgia Institute of Technology* 11.2021-04.2022
- *MS Student*: Aswin Gururaj Prakash
- SCIENTIFIC CONTRIBUTIONS** *Journal Articles*
- J1* **F. I. Doğan**, W. Liu, I. Leite, and S. Chernova, ‘Semantically-Driven Disambiguation for Human-Robot Interaction,’ *RAS*. (in preparation)
- J2* E. Bartoli, **F. I. Doğan**, and I. Leite ‘Streaming Network for Continual Learning of Object Relocations under Household Context Drifts’, *RA-L*. (in preparation)
- J3* **F. I. Doğan**, G. I. Melsión, and I. Leite, ‘Leveraging Explainability for Understanding Object Desc. in Ambiguous 3D Environments,’ *Frontiers in Robotics and AI*, 2023.
- J4* **F. I. Doğan**, S. Gillet, E. J. Carter, and I. Leite, ‘The Impact of Adding Perspective-Taking to Spatial Referencing during Human-Robot Interaction,’ *RAS*, 2020.
- Refereed Conference Publications*
- C1* G. Hadjiantonis, S. Gillet, M. Vázquez, I. Leite, and **F. I. Doğan**, ‘Let’s move on: Topic Change in Robot-Facilitated Group Discussions’, *RO-MAN*. (under review)
- C2* **F. I. Doğan**, I. Torre, and I. Leite, ‘Asking Follow-Up Clarifications to Resolve Ambiguities in Human-Robot Conversation,’ *HRI*, 2022.
- C3* M. Iovino, **F. I. Doğan**, I. Leite, and C. Smith, ‘Interactive Disambiguation for Behavior Tree Execution,’ *Humanoids*, 2022.
- C4* A Panesar, **F. I. Doğan**, and I. Leite, ‘Improving Visual Question Answering by Leveraging Depth and Adapting Explainability’ *RO-MAN*, 2022.
- C5* **F. I. Doğan**, S. Kalkan, and I. Leite, ‘Learning to Generate Unambiguous Spatial Referring Expressions for Real-World Environments,’ *IROS*, 2019.
- C6* P. Jonell, P. Fallgren, **F. I. Doğan**, J. Lopes, U. Wennberg, and G. Skantze, ‘Crowdsourcing a self-evolving dialog graph,’ *CUI*, 2019.
- C7* **F. I. Doğan***, İ. Bozcan*, M. Celik, and S. Kalkan, ‘Cinet: A learning based approach to incremental context modeling in robots,’ *IROS*, 2018.
- C8* **F. I. Doğan**, H. Çelikkanat, and S. Kalkan, ‘A Deep Incremental Boltzmann Machine for Modeling Context in Robots,’ *ICRA*, 2018.
- C9* **F. I. Doğan**, H. Çelikkanat, and S. Kalkan, ‘Robotlarda Bağlamanın Derin Arttırımlı Boltzmann Makineleri ile Modellenmesi,’ *Turkey Robotics Conference (ToRK)*, 2018.
- C10* **F. I. Doğan**, S. Kalkan, ‘Bağlamanın Hiyerarşik Doğası,’ *Turkey Robotics Conference (ToRK)*, 2016.
- C11* O. Yıldız, **F. I. Doğan**, İ. Öztekin, E. Mızrak, and F. T. Y. Vural, ‘A robust normalization method for fMRI data for brain decoding,’ *SIU*, 2016.
- Workshop Proposals*
- P1* E. Yadollahi, M. Romeo, **F. I. Doğan**, W. Johal, M. D. Graaf, S. Levy-Tzedek and I. Leite, ‘Explainability for Human-Robot Collaboration,’ *HRI*, 2024.
- P2* M. Pattel*, **F. I. Doğan***, Z. Zeng, K. Baraka, and S. Chernova, ‘Semantic Scene Understanding for Human-Robot Interaction,’ *HRI*, 2023.
- P3* W. Johal, L. Phaijit, **F. I. Doğan**, A. Tabrez, and M. Graaf, ‘HRI for Explainable Robotics,’ *RO-MAN*, 2023.

* Equal Contribution

Refereed Workshop Publications

- W1 E. Bartoli, **F. I. Doğan**, and I. Leite, ‘Contextualized Knowledge Graph Embeddings for Activity Prediction in Service Robotics,’ *Workshop on SSU for HRI*, HRI 2023.
- W2 **F. I. Doğan**, ‘Social Robots That Understand Natural Language Instructions and Resolve Ambiguities,’ *RSS Pioneers Workshop*, RSS 2021.
- W3 I. Torre, **F. I. Doğan**, and D. Kontogiorgos, ‘Voice, Embodiment, and Autonomy as Identity Affordances,’ *Workshop on Robo-Identity*, HRI 2021.
- W4 **F. I. Doğan**, and I. Leite, ‘Open Challenges on Generating Referring Expressions for Human-Robot Interaction,’ *Workshop on NLG for HRI*, INLG 2020.
- W5 **F. I. Doğan**, H. Çelikkanat, I. Bozcan, and S. Kalkan, ‘Learning to Increment A Contextual Model,’ *Workshop on Continual Learning*, NeurIPS 2018.

Technical Reports

- T1 P. Jonell, M. Bystedt, **F. I. Doğan**, P. Fallgren, J. Ivarsson, M. Slukova, U. Wennberg, J. Lopes, J. Boye, and G. Skantze, ‘Fantom: A crowdsourced social chatbot using an evolving dialog graph,’ *Proceedings of Alexa Prize*, 2018.
- T2 **F. I. Doğan**, and S. Kalkan, ‘Hierarchical Context Modeling Using Incremental Deep Boltzmann Machines,’ *Technical Report, Dept. of Computer Eng., METU*, 2017.

POSTERS AND DEMOS

- [AI-CARING Symposium 2022](#)
- Invited demo on [SIGDIAL Conference 2019](#)
- [SpLU-RoboNLP Workshop at the NAACL-HLT Conference 2019](#)
- [SoRos Workshop 2018 and 2019](#)
- [Amazon Alexa Prize Summit 2018](#)

INVITED TALKS

- [Talking Robotics, 2021](#)
- [Oxford Machine Learning Summer School, Unconference Track, 2021](#)
- [RAIL Research Lab, Georgia Institute of Technology, 2021](#)
- [Image Lab, Middle East Technical University, 2021](#)

HONORS AND AWARDS

- Fellowship from the [Postdoc-NeT-AI in AI and Robotics \(2022\)](#) which brings together outstanding early-career researchers with leading German institutions
- [RSS Pioneer 2021](#), selected to participate in the Robotics: Science and Systems (RSS) Pioneers, which brings together the world’s top early-career researchers
- Honourable mention award in CUI 2019
- High honor certificates (Spring 2014-2015, Fall 2014-2015, Spring 2013-2014, Fall 2013-2014), and honor certificate (Spring 2012-2013) from Middle East Technical University

GRANTS

- Travel grant from Annual Conference of NAACL-HLT 2019
- Travel grant from International Conf. on Robotics and Automation (ICRA) 2018
- Travel grant International Conf. on Intelligent Robots and Systems (IROS) 2018

SERVICES AND VOLUNTEERING

Organization Committee

- Workshop on Explainability for Human-Robot Collaboration, HRI 2024
- Workshop on Semantic Scene Understanding for Human-Robot Interaction, HRI 2023
- Workshop on HRI for Explainable Robotics, RO-MAN 2023
- RSS Pioneers Workshop, Robotics: Science and Systems (RSS), 2022

Program Committee

- International Conference on Multimodal Interaction (ICMI), 2024
- Affective Computing and Intelligent Interaction Conference (ACII), 2024
- Towards Autonomous Robotic Systems Conference (TAROS), 2021
- SpLU-RoboNLP Workshop, 2021 and 2023

Journal Article Referee

- [Frontiers in Robotics and AI](#)
- [IEEE Robotics and Automation Letters \(RA-L\)](#)
- [Autonomous Robots \(AURO\)](#)
- [User Modeling and User-Adapted Interaction \(UMUAI\)](#)

**SELECTED
OUTREACH**

Conference Paper Referee

- Robotics: Science and Systems (RSS)
- Conference on Robot Learning (CoRL)
- International Conference on Robotics and Automation (ICRA)
- International Conference on Human-Robot Interaction (HRI)
- International Conference on Intelligent Robots and Systems (IROS)
- International Conf. on Robot & Human Interactive Communication (RO-MAN)
- Signal Processing and Communication Application Conference (SIU)
- Turkey Robotics Conference (ToRK)

Student Volunteer

- ACM/IEEE International Conference on Human-Robot Interaction (HRI), 2022
- Int. Conf. on Autonomous Agents and Multiagent Systems (AAMAS), 2018
- Swedish Foundation for Strategic Research (SSF), 2023
- KTH School of Electrical Engineering and Computer Science Lab Tours, 2023
- Atlanta Science Festival, Georgia Tech Science and Engineering Day, 2022
- Sveriges Television (SVT), 2020
- The Minister for Higher Education and Research (Matilda Ernkrans), 2019
- Robots Exhibition at the Swedish Tekniska Museum, 2019
- Giants event for female and non-binary high school students, 2018
- European Researchers' Night event for high school students, 2016