

FETHİYE IRMAK DOĞAN

Postdoctoral Research Associate

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OBJECTIVE	Advancing autonomous robots to understand, interact, and collaborate with people
INTERESTS	Human-Robot Interaction, Robot Learning, Explainability, Deep Learning
EDUCATION	<p><i>Ph.D. in Computer Science, KTH Royal Institute of Technology</i> 01.2018-03.2023</p> <ul style="list-style-type: none">– Thesis on <i>Robots That Understand Natural Lang. Inst. and Resolve Ambiguities</i>– 61.0 ECTS credits in PhD-level courses (\approx one academic year; graded pass/fail basis) <p><i>M.Sc. in Computer Engineering, Middle East Technical University</i> 09.2015-01.2018</p> <ul style="list-style-type: none">– Thesis on <i>Hierarchical Incremental Context Modeling on Robots</i>– Graduated with High Honor degree - CGPA: 3.93/4.00 <p><i>B.Sc. in Computer Engineering, Middle East Technical University</i> 09.2010-06.2015</p> <ul style="list-style-type: none">– Graduated with Honor degree - CGPA: 3.40/4.00
EMPLOYMENT AND RESEARCH EXPERIENCE	<p>Postdoctoral researcher at University of Cambridge, UK 04.2024-present</p> <ul style="list-style-type: none">– Generating socially appropriate and adaptive robot actions leveraging LLMs and explainability, working in the AFAR Lab with Prof. Hatice Gunes <p>Postdoctoral researcher at KTH Royal Institute of Technology 03.2023-04.2024</p> <ul style="list-style-type: none">– Continual learning for robots in human environments to help people with their daily tasks, working with Prof. Iolanda Leite's research group <p>Doctoral researcher at KTH (employed for 80% research, 20% teaching) 01.2018-03.2023</p> <ul style="list-style-type: none">– Follow-up clarification techniques (semantic or visual) for robots to resolve ambiguities in user instructions, supervised by Prof. Iolanda Leite <p>Visiting scholar at Georgia Institute of Technology, USA 11.2021-04.2022</p> <ul style="list-style-type: none">– Developing a semantically-driven disambiguation method to handle ambiguous user requests with clarifying questions, supervised by Prof. Sonia Chernova <p>Participating in Oxford Machine Learning Summer School 07.2021-08.2021</p> <ul style="list-style-type: none">– Selected to participate in the highly selective summer school (\sim 15% acceptance rate) for best-in-class training on machine learning and deep learning <p>Participating in Amazon Alexa Prize, KTH Fantom Team 02.2018-08.2018</p> <ul style="list-style-type: none">– Selected as one of 8 teams among the applicants from leading 195 universities to create a social bot, supervised by Prof. Gabriel Skantze <p>Researcher at Middle East Technical University, Turkey 09.2015-01.2018</p> <ul style="list-style-type: none">– Incremental context modeling for robots to make them capable of adapting to challenging real-world environments, supervised by Prof. Sinan Kalkan <p>Senior Design Project at Middle East Technical University 09.2014-06.2015</p> <ul style="list-style-type: none">– 3D animation of fMRI data to visualize the cognitive processes in the brain, supervised by Prof. Fatos Tunay Yarman Vural <p>Research intern at University of Southern Denmark 06.2014-09.2014</p> <ul style="list-style-type: none">– A plugin providing a graphical user interface for automated calibration of UR robot arms, supervised by Prof. Norbert Krueger <p>Research intern at Middle East Technical University 06.2013-09.2013</p> <ul style="list-style-type: none">– Visualizing the 2D and 3D representations of the iCub robot's vision, supervised by Prof. Sinan Kalkan <p>Part time software developer at Özgür Yazılım Company 02.2013-06.2013</p> <ul style="list-style-type: none">– Taking a role in the development of the Tekir Accounting Program

TEACHING	<i>Guest Lecture in the Affective AI Course, University of Cambridge</i>	11.2024
	<i>Teaching Assistant at Interaction Design, University of Cambridge</i>	04.2024-06.2024
	<i>Lecturer at Master-level social robotics course, KTH</i>	10.2023-01.2024
	<i>Teaching Assistant at Master-level machine learning course, KTH</i>	01.2019-03.2023
	<i>Teaching Assistant at C programming language course, METU</i>	02.2014-06.2014
SUPERVISION	<i>University of Cambridge</i>	04.2024-present
	– <i>Mentoring PhDs:</i> Wang Tang (Sichuan University, Publication J4)	
	– <i>Master Thesis Supervision:</i> Rafal Karpiński (Utrecht University)	
	– <i>BS Student Projects (Cambridge):</i> Lara Horne, Yuval Weiss, Ysaswi Malladi	
	– <i>Google DeepMind Intern:</i> Yifei Shi (King’s College London)	
	– <i>Senior Thesis Supervision:</i> Rahma Elsheikh (Princeton University)	
	– <i>Visiting MS Student:</i> Jeshur Joshua (Vellore Institute of Technology)	
	– <i>Visiting BS Students:</i> Umut Ozyurt (METU, Publication C13), Gizem Çınar (Bilkent University, Publication C13), Sujith Sai (Rourkela National Institute of Technology), Zeynep Altundal (Sabanci University)	
	<i>KTH Royal Institute of Technology</i>	01.2019-02.2025
	– <i>Mentoring PhDs:</i> Ermanno Bartoli (Publication C14 and W6), and Anna Deichler	
	– <i>Master Thesis Supervision:</i>	
	(i) Alexander Leszczynski, ‘ <i>LLMs and BTs for User Instructions</i> ’ (Publication C15),	
	(ii) Aiman Shenawa: ‘ <i>Task specific evaluation of Large Language Models</i> ’,	
	(iii) Georgios Hadji.: ‘ <i>Topic change in robot-mod. group diss.</i> ’ (Publication C12),	
	(iv) Amrita Panesar: ‘ <i>VQA with Depth and Adap. Expl.</i> ’ (Publication C9)	
	– <i>MS Project Supervision:</i> Shipra Jain, Jiaming Huang	
	– <i>Research Engineers:</i> Shreya Kohli, Rasmus Rudling, and Alex Sleat	
	– <i>High School Intern:</i> Erik Eriksson	
	<i>Georgia Institute of Technology</i>	11.2021-04.2022
	– <i>MS Student:</i> Aswin Gururaj Prakash	
HONORS AND AWARDS	– Seal of Excellence Award granted by the European Commission after a rigorous international expert project proposal evaluation (2025)	
	– Research Associate at Darwin College , University of Cambridge, awarded through a competitive process for research excellence and academic merit (2024)	
	– Special Recognition for Outstanding Reviews, HRI 2024	
	– Fellowship from Postdoc-NeT-AI (2022) , which brings together outstanding early-career researchers in the field of artificial intelligence and robotics	
	– 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 from Int. Conf. on Conversational User Interfaces 2019	
	– High honour certificates (Spring 2014-2015, Fall 2014-2015, Spring 2013-2014, Fall 2013-2014), and honour certificate (Spring 2012-2013) from METU	
GRANTS AND FUNDS	– Contributor to the Seed Fund Grant (≈ 10.000 £), University of Cambridge, 2024	
	– Travel grant from ACL Annual Conference of NAACL-HLT 2019	
	– Travel grant from IEEE Int. Conf. on Robotics and Automation (ICRA) 2018	
	– Travel grant from IEEE Int. Conf. on Intelligent Robots and Systems (IROS) 2018	

INVITED TALKS

- Keynote speaker on Collective Generative Futures, CHIA Early Career Conf., 2025
- Google DeepMind Research Ready Program, University of Cambridge, 2024
- Talking Robotics, a series of seminars about Robotics and AI, 2021
- Oxford Machine Learning Summer School, Unconference Track, 2021
- RAIL Research Lab, Georgia Institute of Technology, 2021
- Image Lab, Middle East Technical University, 2021

SCIENTIFIC

CONTRIBUTIONS

Journal Articles

- J5* E. Yadollahi*, **F. I. Doğan***, Y. Zhang, B. Nogueira, T. Guerreiro, S. Levy-Tzedek, and I. Leite, ‘Expectations, Explanations, and Embodiment: Attempts at Robot Failure Recovery’. (under review for *Int. Journal of Human-Computer Studies*)
- J4* W. Tang, **F. I. Dogan**, L. Qing, H. Gunes, ‘AsyReC: A Multimodal Graph-based Framework for Spatio-Temporal Asymmetric Dyadic Relationship Classification’. (under review for *IEEE Transactions on Circuits and Systems for Video Technology*)
- J3* N. Churamani, S. Checker, **F. I. Doğan**, H. L. Chiang, and H. Gunes ‘Feature Aggregation with Latent Generative Replay for Federated Continual Learning of Socially Appropriate Robot Behaviours’. (under review for *IEEE RA-L*)
- J2* **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.
- J1* **F. I. Doğan**, S. Gillet, E. J. Carter, and I. Leite, ‘The Impact of Adding Perspective-Taking to Spatial Referencing during Human-Robot Interaction,’ *Robotics and Autonomous Systems (RAS)*, 2020.

Refereed Conference Publications

- C17* **F. I. Doğan**, M. Patel, W. Liu, I. Leite, and S. Chernova, ‘A Model-Agnostic Appr. for Semantically-Driven Disamb. in HRI’. (under review for *IEEE RO-MAN*)
- C16* N. I. Abbasi*, **F. I. Dogan***, G. Laban*, J. Anderson, T. Ford, P. B. Jones, H. Gunes, ‘Robot-Led VLM Wellbeing Assess. of Children’. (under review for *IEEE RO-MAN*)
- C15* A. Leszczynski, S. Gillet, I. Leite, and **F. I. Dogan**, ‘A Test-Driven Appr. for Modular Unders. of User Instr. Leveraging BTs and LLMs’. (under review for *IEEE RO-MAN*)
- C14* E. Bartoli, **F. I. Doğan**, and I. Leite ‘Streaming Netw. for Cont. Learning of Object Reloc. under Household Context Drifts’. (under review for *IEEE RO-MAN*)
- C13* **F. I. Doğan**, U. Ozturk, G. Cinar, and H. Gunes, ‘GRACE: Generating Socially Appr. Robot Actions Leveraging LLMs and Human Explanations’, *IEEE ICRA*, 2025.
- C12* G. Hadjiantonis, S. Gillet, M. Vázquez, I. Leite, and **F. I. Doğan**, ‘Let’s move on: Topic Change in Robot-Facilitated Group Discussions’, *IEEE RO-MAN*, 2024.
- C11* **F. I. Doğan**, I. Torre , and I. Leite, ‘Asking Follow-Up Clarifications to Resolve Ambiguities in Human-Robot Conversation,’ *ACM/IEEE HRI*, 2022.
- C10* M. Iovino, **F. I. Doğan**, I. Leite, and C. Smith, ‘Interactive Disambiguation for Behavior Tree Execution,’ *IEEE Humanoids*, 2022.
- C9* A Panesar, **F. I. Doğan**, and I. Leite, ‘Improving Visual Question Answering by Leveraging Depth and Adapting Explainability,’ *IEEE RO-MAN*, 2022.
- C8* **F. I. Doğan**, S. Kalkan, and I. Leite, ‘Learning to Generate Unambiguous Spatial Referring Expressions for Real-World Environments,’ *IEEE IROS*, 2019.
- C7* P. Jonell, P. Fallgren, **F. I. Doğan**, J. Lopes, U. Wennberg, and G. Skantze, ‘Crowdsourcing a self-evolving dialog graph,’ *ACM CUI*, 2019.
- C6* **F. I. Doğan***, İ. Bozcan*, M. Celik, and S. Kalkan, ‘Cinet: A learning based approach to incremental context modeling in robots,’ *IEEE IROS*, 2018.

* Equal Contribution

- C5 **F. I. Doğan**, H. Çelikkanat, and S. Kalkan, ‘A Deep Incremental Boltzmann Machine for Modeling Context in Robots,’ *IEEE ICRA*, 2018.
- C4 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 SocialBot Grand Challenge*, 2018.
- C3 **F. I. Doğan**, H. Çelikkanat, and S. Kalkan, ‘Robotlarda Bağlamın Derin Artırımlı Boltzmann Makineleri ile Modellenmesi,’ *Turkey Robotics Conference (ToRK)*, 2018.
- C2 O. Yıldız, **F. I. Doğan**, İ. Öztekin, E. Mızrak, and F. T. Y. Vural, ‘A robust normalization method for fMRI data for brain decoding,’ *IEEE SIU*, 2016.
- C1 **F. I. Doğan**, S. Kalkan, ‘Bağlamın Hiyerarşik Doğası,’ *ToRK*, 2016.

Workshop Proposals

- P4 E. Yadollahi, **F. I. Doğan**, M. Romeo, D. Kontogiorgos, P. Qian, and Y. Zhang, ‘Exp. in Human-Robot Collob.: Real-World Concerns,’ *In Proc. of ACM/IEEE HRI*, 2025.
- P3 E. Yadollahi, M. Romeo, **F. I. Doğan**, W. Johal, M. D. Graaf, S. Levy-Tzedek and I. Leite, ‘Exp. for Human-Robot Collaboration,’ *In Comp. of ACM/IEEE HRI*, 2024.
- P2 M. Pattel*, **F. I. Doğan***, Z. Zeng, K. Baraka, and S. Chernova, ‘Semantic Scene Understanding for Human-Robot Interaction,’ *In Comp. of ACM/IEEE HRI*, 2023.
- P1 W. Johal, L. Phaijit, **F. I. Doğan**, A. Tabrez, and M. Graaf, ‘HRI for Explainable Robotics,’ *IEEE RO-MAN*, 2023.

Refereed Workshop Contributions

- W6 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.
- W5 **F. I. Doğan**, ‘Social Robots That Understand Natural Language Instructions and Resolve Ambiguities,’ *RSS Pioneers Workshop*, RSS 2021.
- W4 I. Torre, **F. I. Doğan**, and D. Kontogiorgos, ‘Voice, Embodiment, and Autonomy as Identity Affordances,’ *Workshop on Robo-Identity*, HRI 2021.
- W3 **F. I. Doğan**, and I. Leite, ‘Open Challenges on Generating Referring Expressions for Human-Robot Interaction,’ *Workshop on NLG for HRI*, INLG 2020.
- W2 **F. I. Doğan**, S. Kalkan, and I. Leite, ‘Learning to Gen. Unambiguous Spatial Ref. Expressions for Real-World Env.,’ *SpLU-RoboNLP Workshop*, NAACL-HLT 2019.
- W1 **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 **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

COMMUNITY EVENTS AND SERVICES

Organization Committee

- Robotics and Embodied Intelligence Workshop, CHIA, University of Cambridge, 2025
- Workshop on Expl. in Human-Robot Collaboration: Real-World Concerns, HRI 2025
- 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

* Equal Contribution

Conference Session Chairing

- Chair of Human-Robot Interaction Session at IEEE ICRA 2025

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)

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 Conference on Multimodal Interaction (ICMI)
- 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

**SELECTED
OUTREACH**

- Featured in BBC Click by Spencer Kelly for his 1000th and final episode, 2025
- HE+ Hampshire Lecture, Trinity Hall, University of Cambridge 2025
- [Trinity Hall Science Open Day](#), University of Cambridge 2025
- [Human Machine Interaction Showcase](#), University of Cambridge, 2025
- 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
- Featured in a documentary on Sveriges Television (SVT), 2020
- Sweden's 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
- Live broadcast on national Turkish TV (Kanal B) on image processing and AI, 2017
- European Researchers' Night event for high school students, 2016

**EXTRA-
CURRICULAR**

- Member of the [Dept. Research Staff Forum](#), University of Cambridge (2024-present)
- Theater (played in private theatres for 8 years and 5 plays)
- [Computer Engineers' Association](#) board member, 2016-2018
- [Student Delegate Committee](#) member at Middle East Technical University, 2010-2011