

# Bengisu Cagiltay

PHD STUDENT · COMPUTER SCIENCES

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## Research Interests

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Qualitative researcher focusing on designing social companion robots *for children and families*.

Interdisciplinary research in Human-Computer Interaction(HCI), Human-Robot Interaction (HRI), Child-Robot Interaction.

## Education

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### University of Wisconsin-Madison

PHD COMPUTER SCIENCES

• Advisor: Dr. Bilge Mutlu

Madison, Wisconsin

Fall 2020 – present

### Middle East Technical University

MS COGNITIVE SCIENCE

• Advisor: Dr. Cengiz Acarturk

• “An investigation of interactions with conversational violations: Insights from visual perception and Gricean Maxim violations”

Ankara, Turkey

2018 – 2020

### Bilkent University

BS COMPUTER SCIENCE

Ankara, Turkey

2014 – 2018

## Research Experience

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### Graduate Research Assistant – People and Robots Laboratory

ADVISOR: DR. BILGE MUTLU

• *Designing Learning Companion Robots for Children*

Conducting qualitative and quantitative research in human-robot interaction and designing educational robots for children.  
*Laboratory Website:* peopleandrobots.wisc.edu

Madison, WI

Jun. 2019 – Ongoing

### Meta (Formerly Facebook) – Privacy Org

QUALITATIVE UX RESEARCHER INTERN

• Project: Privacy Education for Teens, Privacy Regulatory Readiness, UX Research Team

Menlo Park, CA

May. 2022 – Sep. 2022

### University of Eastern Finland – Dept. of Special Education

ADVISOR: DR. EIJA KARNA

• *PEICAS - Peer Interactions involving Children with Autism Spectrum disorder in inclusive classrooms*

Collaborated on an interdisciplinary eye-tracking study to understand social participation patterns of children with autism.  
*Project Website:* peicas.fi

Joensuu, Finland

Sep. 2019 – Sep. 2022

### Middle East Technical University – Dept. of Cognitive Science

ADVISOR: DR. CENGİZ ACARTURK

• *Visual Cognition Research using Eye-Tracking Technologies*

Conducted research in the domain of visual cognition and human-computer interactions using eye-tracking technologies.  
Proficiency in Tobii and SMI eye-tracking devices and software.

Ankara, Turkey

Feb. 2018 – Nov. 2020

### Nielsen Data Analytics

FREELANCE RESEARCHER

• *Neuro-Marketing Research*

Conducted data collection and analysis of a multi-modal neuro-marketing study using eye tracking (Tobii Pro Glasses 2) and functional near-infrared spectroscopy, i.e. fNIRS.

Istanbul, Turkey

2019

## University of Alabama – Dept. of Educational Neuroscience and Computer Sciences

Tuscaloosa, AL

ADVISORS: DR. FIRAT SOYLU AND DR. JEFF GRAY

Jul. 2017 – Sep. 2017

### • Embodied Learning Design and Educational Neuroscience Lab

Advisor: Dr. Firat Soylu

Supported ongoing research in numerical cognition, number gestures, and finger counting in mathematical development, using neuroimaging techniques, i.e. EEG.

Laboratory Website: elden.ua.edu

### • Computer Science Department

Advisor: Dr. Jeff Gray

Mentored in a summer programming class for high-school students.

## Publications

\* equal contribution; + mentored graduate student

### PUBLISHED

**Cagiltay, B.**, Mutlu, B., & Kerr, M. (2023). Family Theories in Child-Robot Interactions: Understanding Families as a Whole for Child-Robot Interaction Design. In *Interaction Design and Children (IDC 23)* ACM.

**Cagiltay, B.**, Mutlu, B., & Michaelis, J. E. (2023). “My Unconditional Homework Buddy:” Exploring Children’s Preferences for a Homework Companion Robot. In *Interaction Design and Children (IDC 23)* ACM.

**Cagiltay, B.** (2023, April). Designing for In-Home Long-Term Family-Robot Interactions: Family Preferences, Connection-Making, and Privacy. In *Extended Abstracts of the 2023 CHI Conference on Human Factors in Computing Systems* ACM.

Praveena, P\*, **Cagiltay, B.\***, Gleicher, M., & Mutlu, B. (2023, April). Exploring the Use of Collaborative Robots in Cinematography. In *Extended Abstracts of the 2023 CHI Conference on Human Factors in Computing Systems* ACM.

**Cagiltay, B.\***, Michaelis, J. E.\*, Ibtasar, R., & Mutlu, B. (2023, March). “Off Script:” Design Opportunities Emerging from Long-Term Social Robot Interactions In-the-Wild. In *Proceedings of the 2023 ACM/IEEE International Conference on HRI*.

Lee, C. P.+, **Cagiltay, B.**, Sullivan, D., & Mutlu, B. (2023, March). Demonstrating the Potential of Interactive Product Packaging for Enriching Human-Robot Interaction. In *Companion of the 2023 ACM/IEEE International Conference on HRI*

**Cagiltay, B.**, Michaelis, J., Sebo, S., and Mutlu, B. 2022. Exploring Children’s Preferences for Taking Care of a Social Robot. In *Interaction Design and Children (IDC 22)*. ACM. **Best Short Paper Award**

**Cagiltay, B.**, White, N., Ibtasar, R., Mutlu, B., & Michaelis, J. (2022, July) Understanding Factors that Shape Children’s Long Term Engagement with an In-Home Learning Companion Robot. In *Interaction Design and Children (IDC 22)* ACM.

Lee, C.+, **Cagiltay, B.**, & Mutlu, B. (2022, May) The Unboxing Experience: Exploration and Design of Initial Interactions Between Children and Social Robots. In *CHI Conference on Human Factors in Computing Systems (CHI’22)*. Article 151, 1–14. ACM. **Best Paper Honorable Mention Award**

Tang, B., Chandrasekaran, V., **Cagiltay, B.**, Sullivan, D., Fawaz, K., Mutlu, B. (HRI 2022) Confidant: A Privacy Controller for Social Robots. In *Proceedings of the 2022 ACM/IEEE International Conference on Human-Robot Interaction (HRI’22)*. IEEE

Suero Montero, C., **Cagiltay, B.**, Dindar, K., Kärnä, E., Kilpiä, A., Pihlainen, K., Kämäräinen, A. (2022) Analysing Inclusive Groups’ Peer Interactions Using Mobile Eye Tracking in Educational Context, In *EDULEARN22 Proceedings*

Suero Montero, C., Kilpiä, A., Kamarainen, A., **Cagiltay, B.**, Kärnä, E., Cagiltay, K., Pihlainen, K., & Karasu, N. (2022). Mobile Eye Tracking Research in Inclusive Classrooms: Children’s Experiences. In *2022 International Conference on Advanced Learning Technologies (ICALT)* IEEE

**Cagiltay, B.\***, White, N. T\*, Michaelis, J. E., & Mutlu, B. (2021, June). Designing Emotionally Expressive Social Commentary to Facilitate Child-Robot Interaction. In *Interaction Design and Children* (pp. 314-325). ACM.

Ho, H. R., **Cagiltay, B.**, White, N. T., Hubbard, E. M., & Mutlu, B. (2021, June). RoboMath: Designing a Learning Companion Robot to Support Children’s Numerical Skills. In *Interaction Design and Children*. (pp. 283-293). ACM.

Zhao, F., White, N., **Cagiltay, B.**, Niedenthal, P., Michaelis, J. E., & Mutlu, B. (2021). Designing Emotional Expressions for a Reading Companion Robot. In *Society for Affective Science Conference (SAS 2021)*.

**Cagiltay, B.**, Ho, H. R., Michaelis, J. E., & Mutlu, B. (2020, June). Investigating family perceptions and design preferences for an in-home robot. In *Proceedings of the interaction design and children conference* (pp. 229-242). ACM.

**Cagiltay, B.** (2020). An investigation of interactions with conversational violations: Insights from visual perception and Gricean Maxim violations (Master’s thesis, Middle East Technical University).

## IN PREP

**Cagiltay, B.,** Lee, C., Ernst, J., & Mutlu, B. (In Prep) An Ethnography Study of Urban Delivery Robots on University Campus

## Mentoring

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- 2022–Cur. **Amy Koike**, PhD Student, Computer Sciences, University of Wisconsin-Madison
- 2021–2022 **Christine Lee**, PhD Student, Computer Sciences, University of Wisconsin-Madison
- 2021–2023 **Batuhan Bayraktar**, Honors Thesis, Computer Sciences, University of Wisconsin-Madison
- 2023 **Ellie Smith**, Undergraduate, Computer Sciences, University of Wisconsin-Madison
- 2022–2023 **Jingyu Chen**, NSF REU, Computer Sciences, University of Wisconsin-Madison
- 2022 **Lisette Lurker**, NSF REU, Computer Sciences, University of Wisconsin-Madison

## Awards, Fellowships, & Grants

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- 2023 **CHI 2023 Doctoral Consortium Award**, CHI Conference of Human Factors in Computing \$ 1,800

## Professional Development, Service & Outreach

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**Chaired Workshop**, IDC 2023 – “From Child-Centered to Family-Centered Interaction Design” Website: [bit.ly/idc23fcid](https://bit.ly/idc23fcid)

**Doctoral Consortium Attendee**, CHI 2023 – Attended among 20 fellow doctoral students, accepted out of 115 submissions.

**Morgridge Entrepreneurial Bootcamp**, Attended, June 2023, University of Wisconsin-Madison

**Digital Media Workshop (Demo)** Cognitive Developmental Society 2022. A Reading Companion Robot for Children.

### SERVICE AND OUTREACH

- 2023 **Frontiers Journal, Special Research Topic**, Topic Coordinator. Title: “From Child-Centered to Family-Centered Design for New Technology” *Madison, WI*
- 2023, May **People and Robots Lab**, Hiring Manager, Editor and Illustrator Positions *Madison, WI*
- 2023, Jul **Grandparents University**, Teaching Assistant *Madison, WI*
- 2023, Spr. **Monona Grove Liberal Arts Charter School**, LEGO Fun Camp Mentor *Madison, WI*
- 2020, Fall **4H Wisconsin**, Junkdrawer Robotics Mentor *Oneida, WI*
- 2017–Cur. **First Lego League Volunteer**, Referee and Robot Design Judge *Turkey & USA*
- May 2019 **World Robot Olympiad**, Referee *Turkey*
- 2011 **LEGO Robot Education Mentor**, Mentored in STEM summer camps to teach underprivileged middle school students robotics and science. (1) Turkish Education Volunteers Foundation (TEGV) LEGO Robot Camp Mentor, *Ankara, Turkey* (2) Turkish National Science Foundation (TUBITAK) Science Camp Mentor, *Hatay, Turkey* (3) Atılım University Fun Science Camp Mentor, *Ankara, Turkey* *Turkey*

### PEER REVIEW

– ACM/SIG Conferences CHI, HRI, DIS, IDC, HAI

**Special Recognition for Outstanding Reviews** Two (2) in Human Factors in Computing Systems (CHI) Papers and Pictorials, One (1) in Designing Interactive Systems (DIS) Papers and Pictorials

– International Journal of Social Robotics

– Interaction Studies Journal

– Frontiers in Robotics and AI

## GRANTS CONTRIBUTED TO

NSF Award # 1906854, 2247381, 2202802

## COMPETITIONS AND AWARDS

- First place award** in Computer Science projects 2018  
“University Students Project Competition in Priority Areas”  
*Turkish National Science Foundation (Program: 2242)*  
Project Title: “MEDIPO: Medical Image Processing Online”
- Second place award** in Computer Science projects 2012  
“National High School Research Projects Contest”  
*Turkish National Science Foundation (Program: 2204)*  
Project Title: “Teaching Difficult History Lessons via Virtual Reality”
- Third place award** for designing a concept solution for sustainability problem for food waste 2012  
*International Concept Project Competition (ICPC)*  
Middle East Technical University, Northern Cyprus
- First place award** for “Best Robot Performance” 2010  
*First Lego League robotics tournament*  
Ankara, Turkey

## RESEARCH METHODS AND SKILLS

**Expertise in:** Lab studies, field studies, remote studies, semi-structured interviews, participatory design workshops, ethnography, surveys, usability testing, qualitative coding, thematic analysis, interaction logs analysis, eye-tracking studies, crowd-sourcing (e.g., MTurk).

**Tools:** Qualtrics (Survey Design), NVivo (Qualitative Analysis), Tobii Pro Lab (Eye Tracking).