Zana Buçinca

zbucinca@seas.harvard.edu • scholar.harvard.edu/zbucinca •

Research Interests

Human-AI Interaction; AI-Assisted Decision Making; Machine Learning; Responsible AI

Education

2019 – Present **Harvard University** *Cambridge, MA*
PhD in Computer Science, *GPA: 4.00/4.00*
Thesis: Designing Value-Aligned Human-AI Interaction

2016 – 2019 **Koç University** *Istanbul, Turkey*
MS in Computer Science and Engineering, *GPA: 3.96/4.00*
Thesis: Incorporating Affect Into Dialog Generation

2012 – 2016 **Izmir Institute of Technology** *Izmir, Turkey*
BS in Computer Engineering, *GPA: 3.89/4.00*
Ranked 1st in the School of Engineering
Thesis: Motion Decomposition for Removing Obstacles in Images.

Manuscripts Under Review

2024 Contrastive Explanations That Anticipate Human Misconceptions Can Improve Human Decision-Making Skills
Zana Buçinca, Siddharth Swaroop, Amanda E. Paluch, Finale Doshi-Velez, Krzysztof Z. Gajos.
26 pages, 2025 (under review – CHI).

2024 Personalising AI Assistance Based on Overreliance Rate in AI-Assisted Decision Making
Siddharth Swaroop, **Zana Buçinca**, Finale Doshi-Velez, Krzysztof Z. Gajos.
20 pages, 2025 (under review – IUI).

2024 Towards Optimizing Human-Centered Objectives in AI-Assisted Decision-Making With Offline Reinforcement Learning
Zana Buçinca, Siddharth Swaroop, Amanda E. Paluch, Susan A. Murphy, Krzysztof Z. Gajos.
25 pages, 2024 (under review – TOCHI).

2023 AHA!: Facilitating AI Impact Assessment by Generating Examples of Harms
Zana Buçinca, Chau Pham, Maurice Jakesch, Marco Ribeiro, Alexandra Olteanu, Saleema Amershi.
22 pages, 2024 (under review – TOCHI).

Journal & Conference Publications

2024 Accuracy-Time Tradeoffs in AI-Assisted Decision Making under Time Pressure
Siddharth Swaroop, **Zana Buçinca**, Krzysztof Z. Gajos, Finale Doshi-Velez
17 pages, In Proceedings of ACM Intelligent User Interfaces, IUI'24, 2024.

2022 How Different Groups Prioritize Ethical Values for Responsible AI
Maurice Jakesch, **Zana Buçinca**, Saleema Amershi, Alexandra Olteanu.
20 pages, 2022 ACM Conference on Fairness, Accountability, and Transparency (FAccT), 2022.

2021 To Trust or to Think: Cognitive Forcing Functions Can Reduce Overreliance on AI in AI-Assisted Decision-Making
Zana Buçinca, Maja B. Malaya, Krzysztof Z. Gajos.
21 pages, In Proceedings of ACM Human-Computer Interaction (CSCW), 2021.

2020 Proxy Tasks and Subjective Measures Can Be Misleading in Evaluating Explainable AI Systems
Zana Buçinca*, Phoebe Lin*, Krzysztof Z. Gajos, Elena L. Glassman.
11 pages, In Proceedings of ACM Intelligent User Interfaces, IUI'20, Cagliari, Italy, 2020 Best Paper Award 🏆.

2020 AffectON: Incorporating Affect Into Dialog Generation
Zana Buçinca, Engin Erzin, Yucel Yemez, Metin T. Sezgin
13 pages, in IEEE Transactions on Affective Computing, 2020.

2017 Analysis of Engagement and User Experience with a Laughter Responsive Social Robot
Berker B. Turker, **Zana Buçinca**, Engin Erzin, Yucel Yemez, Metin T. Sezgin
5 pages, In Proceedings of Interspeech: Annual Conference of the International Speech Communication Association, 2017.

2017 Real Time Audiovisual Laughter Detection
Berker B. Turker, **Zana Buçinca**, Metin T. Sezgin, Yucel Yemez, Engin Erzin
5 pages, In 25th IEEE Signal Processing and Communications Applications Conference, 2017.

Peer-reviewed Workshop Publications

2023 Adaptive Interventions for Both Accuracy and Time in AI-Assisted Human Decision Making
Siddharth Swaroop, **Zana Buçinca**, Finale Doshi-Velez.
7 pages, 2023 Workshop on AI & HCI at ICML, 2023.

2022 Beyond End Predictions: Stop Putting Machine Learning First and Design Human-Centered AI for Decision Support
Zana Buçinca, Alexandra Chouldechova, Jennifer Wortman Vaughan, Krzysztof Z. Gajos.
4 pages, 2022 Human-Centered AI Workshop at NeurIPS, 2022.

Research Experience

Jul 2019 – Present
Intelligent Interactive Systems Group, Harvard Unviersity *Cambridge, MA*
Research Assistant

- Developed a novel human-AI interaction model that optimizes human-centric objectives by providing adaptive decision support using reinforcement learning.
- Conducted research on developing mutual mental models of the task in human-AI decision-making.
- Designed and implemented interaction interventions to reduce overreliance on AI in AI-assisted decision-making. Evaluated the effectiveness of the interventions by designing and running large scale human experiments.
- Investigated the effect of task and measures in evaluating explainable AI systems by carefully designing and running large scale human experiments.

May 2022 – Aug 2022
FATE, Microsoft Research *New York, NY*
Research Intern
Mentors: Dr. Jennifer Wortman Vaughan & Dr. Alexandra Chouldechova
Performed research on designing human-centered AI-powered tools for decision support. Designed and implemented different forms of decision support and carried out large-scale human subjects experiments to evaluate them.

Jun 2021 – Sep 2021
Adaptive Interactive Systems, Microsoft Research *Redmond, WA*
Research Intern
Mentors: Dr. Saleema Amershi, Dr. Alexandra Olteanu, Dr. Mario Tulio Ribeiro
Designed and implemented a sociotechnical approach for anticipating the consequences and harms of AI-infused systems prior to deployment.

Sep 2016 – Mar 2019 **Intelligent User Interfaces, Koç University** *Istanbul, Turkey*
Research Assistant

- Developed a novel affective dialog generation model by incorporating affective information during inference using state-of-the-art language models and Valence-Arousal-Dominance word space. Evaluated the generated language through user studies on MTurk via a custom user interface.
- Performed research on engagement analysis and improvement in human-robot interaction. Carried out experiments with human subjects and Furhat robotic head to measure the effect of laughter perception on engagement in human-robot interaction.
- Developed a real-time multimodal laughter detection module utilizing Kinect, accounting for both audio and visual channels.

Sep 2015 – May 2016 **Visual Intelligence Research Group, Izmir Institute of Technology** *Izmir, Turkey*
Undergrad Researcher
Worked on computer vision techniques to remove obstructions from images. Implemented a computational approach for background/foreground decomposition in images.

Jun 2015 – Sep 2015 **Artificial Intelligence and Robotics Lab, Polytechnic University of Milan** *Milan, Italy*
Visiting Researcher
Performed research on development of robots showing emotions by movement. Implemented a parametric model on a pet robot to express distinct emotions based on Laban Movement Analysis components (body, effort, shape, space).

Teaching & Professional Experience

Fall 2022 & 2023 **Teaching fellow, Computational Science and Engineering Capstone Project, Harvard University**
Mentored master students through the conceptualization and implementation of research projects related to the responsible development and deployment of machine learning tools.

Fall 2020 **Teaching fellow, System Design Project, Harvard University**
Co-taught and actively participated in the design of a course in which students worked together for a semester on a broad challenge to re-imagine civic engagement during and after the pandemic. In designing the course, we strove to provide students with a set of effective intellectual tools that would help them uncover and understand inequalities, link those inequalities to systemic problems, reason about how their own solutions might affect those inequalities, and anticipate and be accountable for unintended consequences.

Sep 2016 - Jan 2019 **Teaching assistant, Koç University**

- *Fall 2018*, Course: Structure and Interpretation of Computer Programs
- *Spring 2018*, Course: Mobile Device Programming
- *Fall 2017*, Course: Programming Language Concepts
- *Spring 2017*, Course: Data Structures and Algorithms
- *Fall 2016*, Course: Artificial Intelligence

Responsibilities included: leading discussion or laboratory sections, holding office hours, conceptualizing and crafting assignments, grading exams and assignments.

Recognition, Awards & Scholarships

2025 **Siebel Scholar**
Grant awarded for academic excellence and demonstrated leadership

2024 **Rising Star in AI — University of Michigan**
Recognized by University of Michigan's Artificial Intelligence Laboratory

2024 **Rising Star in MS&E — Stanford**
Recognized by Stanford's Management Science and Engineering Department

2024 **NextProf Nexus – UMich, UC Berkeley, Georgia Tech**
Selected to attend NextProf, a program designed to prepare diverse and promising faculty candidates for the academic job market.

2024 **Top 10 Most Inspiring Women in STEM** (Kosovo)
Recognized by UNDP Kosovo.

2022 - 2023 **IBM PhD Fellowship Recipient**

2023, 2024 **Outstanding Reviewer**
Special recognition for outstanding reviews at CHI 2023, CHI 2024, UIST 2024.

2020 **Best Paper Award**
*#1 paper at ACM Intelligent User Interfaces conference (acceptance rate: **23.6%**).*

2020 **NSF Travel Award Recipient**
Merit based travel grant awarded by NSF to attend ACM IUI Conference (canceled due to COVID-19).

2020 **CRA-W Grad Cohort Scholarship Recipient**
(canceled due to COVID-19).

2017 **ISCA Travel Award Recipient**
Merit based travel grant awarded by International Speech Communication Association to attend the Interspeech Conference.

2016 - 2018 **Koç University MS Fellowship**
Excellence fellowship awarded by Koc University to only one applicant per year.

2012 - 2016 **High Honor Student**
Graduated with the highest GPA in the School of Engineering.

2016 **GBYF (Young Brains New Ideas) Second Place Award**
My undergrad thesis won the 2nd place in a competition amongst 250 theses in Izmir.

2012 - 2016 **Turkish Scholarship**
Excellence scholarship awarded by the Turkish government to international students.

Talks, Guest Lectures & Panels

May 2024 Value-Aligned Human-AI Interaction
University of Washington — HCI Seminar

May 2024 Value-Aligned Human-AI Interaction
CHI — Doctoral Consortium

May 2024 Value-Aligned Human-AI Interaction
MIT CSAIL — Visualization Group

Mar 2024 Value-Aligned Human-AI Interaction
IBM — Design for AI

Feb 2024 Value-Aligned Human-AI Interaction
Nokia Bell Labs — Responsible AI Series

Feb 2024 Offline Reinforcement Learning for Adaptive Support in AI-Assisted Decision-Making
Northeastern University — Human-Centered AI Group

Feb 2024 Value-Aligned Human-AI Interaction
Northeastern University — HCI Guest Lecture

Nov 2023 Value-Aligned Human-AI Interaction
Harvard University — Recompute

Sep 2023 Adaptive Support in AI-Assisted Decision-Making
University of Michigan — Data Science for Dynamic Intervention Decision Making Center

Jun 2023 Value-Aligned Human-AI Interaction
Federal Aviation Administration

Jul 2022 Designing Cognition-Cognizant AI for Decision-Making Support
Wellesley College

Mar 2022 What is Explainable AI?
Workshop on AI organized by MITxHarvard Women in AI for high-school students

Nov 2021 Designing Cognition-Cognizant AI for Decision-Making Support
McGill University – Department of Psychology

Oct 2021 Designing Cognition-Cognizant AI for Decision-Making Support
Cornell University – Information Science Seminar

Oct 2021 How to succeed in AI? – Motivational Speaker
Workshop on AI for young women organized by IPKO Foundation, Kosovo

Feb 2021 Young Scientists Interview Series
MITxHarvard Women in AI

Jan 2021 Panelist at Career Paths Panel
Harvard WECode 2021 High School Conference

Students Mentored

2024 - **Yiko Li**, Graduate student at Harvard

2023 - **Nadine Han**, Undergraduate student at Harvard

2023 **Kim Llajaruna**, Graduate student at Harvard

2022 - 23 **Emilia Mazzolenis**, Graduate student at Harvard

2022 **Christina Xiao**, Undergraduate student at Harvard

2022 **Ryan Kim**, Undergraduate student at Harvard

2021 **Susannah Su**, Undergraduate student at Harvard

2020 - 21 **Xincheng Tan**, Undergraduate student at Harvard

2020 **Maja B. Malaya**, Visiting student at Harvard from Lodz University of Technology in Poland

2017 **Çisem Altan**, Undergraduate student at Koç University

2017 **Ilayda Zengin**, Undergraduate student at Koç University

Outreach & Service

2024 **Workshop Organizer**
Co-organized a workshop in Trust and Reliance in Human-AI Workflows (TREW) at CHI. chi-trew.github.io

2022, 2023 **Workshop Organizer**
Co-organized a workshop in Trust and Reliance in AI-Human Teams (TRAIT) at the most prominent conference in Human-Computer Interactions (CHI). chi-trait.github.io

2021- **Program Committee Member**

FAccT'24 Conference on Fairness, Accountability, and Transparency (ACM FAccT).
Workshop on Explainable AI at **IJCAI'24** (XAI 2024).
FAccT'23 Conference on Fairness, Accountability, and Transparency (ACM FAccT).
Workshop on AI & HCI at **ICML'23** (AI & HCI 2023).
Workshop on Explainable AI at **IJCAI'23** (XAI 2023).
WWW'23 Crowdsourcing and Human Computation Track.
Workshop on Human-Centered AI (HCAI) at **NeurIPS'22**.
Workshop on Transparency and Explanations in Smart Systems (TEXSS) at **IUI'22**.

2020- **Reviewer**

CSCW (2020, 2021, 2022, 2023), CHI (2021, 2022, 2023, 2024), IUI (2022), TOCHI(2022), TiiS (2022), IEEE TAC (2021)

2022 **Organizer of the AI-assisted decision-making colloquium at Harvard**

Organized a colloquium on AI-assisted decision-making at Harvard. The aim was to provide a forum for Harvard researchers with diverse backgrounds, ranging from machine learning to HCI, visualization, and psychology, that had either worked or were interested in the space of AI-assisted decision-making to share their findings and insights on how to design, build, and evaluate AI that complements human decision-making.

2020 - **Mentor – WiSTEM Harvard**

I mentor undergraduate Harvard women that want to pursue careers in STEM. The mission of WiSTEM (Women in Science, Technology, Engineering, and Mathematics) is to create and maintain an environment that fosters the growth and development of women students in the science, technology, engineering, and mathematics community at Harvard College through mentorship.

2020 **Founder of HCI Reading Group for Undergrads at Harvard**

I organized and led a weekly reading group on Human-Computer Interaction topics at Harvard. I aimed to foster interest about the field for undergrads with varying levels of exposure to HCI.

2017- **Founder of Kosovo Association for Women in Tech**

I organize talks and workshops to foster young women in Kosovo pursue careers in technology.

2014-2016 **Trainer at CoderDojo**

Taught young people (age 7-17) how to code (2 hours per week).

Technical Strengths

Programming languages

Multi-paradigm: Python, Julia; Object-oriented: Java, C++, Scala; Web development; Data analysis: R

Frameworks

Deep Learning: Pytorch and Knet; Parallel Programming: CUDA, OpenMP, MPI; Computer Vision: OpenCV; Computer Graphics: OpenGL

Languages

Albanian (native), English (fluent), Turkish (fluent), Spanish (intermediate), Italian (intermediate), German (basic)