Nur Yildirim

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Research Interest

My research focuses on supporting cross-functional teams in collectively ideating with AI. I build tools, methods, and boundary objects to help AI teams in (1) envisioning human-AI interactions collectively before deciding what AI system to build, and (2) facilitating collaboration and participation across disciplines and stakeholders in AI development processes. My current projects include envisioning AI opportunities for the Intensive Care Unit; developing a taxonomy of AI capabilities; and scaffolding collaboration around fairness efforts across AI team members.

Education

08/2018 – 06/2024 (expected) **Carnegie Mellon University** — **Pittsburgh, PA, USA**
Ph.D. in Human-Computer Interaction
School of Computer Science
Advisors: John Zimmerman and James McCann
Concentration: Computer Science

09/2011 – 09/2014 **Middle East Technical University** — **Ankara, Turkey**
M.Sc. in Industrial Design (Informatics track)
School of Architecture
Graduated with Honors

09/2007 – 06/2011 **Middle East Technical University** — **Ankara, Turkey**
B.ID. in Industrial Design
School of Architecture
Graduated with Honors

Experience

03/2020 – 02/2021 **Accenture Technology Labs** — **(Remote)**
Research Lead on Sponsored Research
Led Accenture-CMU collaborative research project investigating how design practitioners effectively envision AI innovations. Conducted interviews and co-design workshops with cross-functional AI teams (20+ participants). Performed qualitative analysis of transcripts. Communicated results throughout the process. Project resulted in a CHI 2022 publication.

06/2011 – 07/2018 **Designnobis** — **Ankara, Turkey**
Industrial Designer
Managed projects ranging from consumer electronics to assistive robots, microfluidics, transportation, lighting and toys. Carried out research, ideation, concept development, CAD modeling, prototyping and product realization via local and global manufacturers. Shipped 25+ products along with several patents and design awards. Worked in close collaboration with interdisciplinary teams of clients across scales, including tech start-ups, SMEs, institutions and corporates.

Peer-Reviewed Conference Publications

[C.2] **Nur Yildirim**, Changhoon Oh, Teresa Tung, Alex Kass, Jodi Forlizzi, John Zimmerman. How Experienced Designers of Enterprise Applications Engage AI as a Design Material. *(To appear at CHI'22)*

[C.1] **Nur Yildirim**, James McCann, John Zimmerman. 2020. Digital Fabrication Tools at Work: Probing Professionals' Current Needs and Desired Futures. In *Proceedings of the 2020 CHI Conference on Human Factors in Computing Systems* **(CHI'20)**. Honolulu, HI, USA.

Publications Under Review or In Progress

[P.2] **Nur Yildirim**, Changhoon Oh, Violet Turri, John Zimmerman, Jodi Forlizzi. Taxonomy of AI Capabilities: Empowering Designers to Envision Buildable AI Things. *(Under Review)*

[P.1] Wesley Deng, Monica Chang, **Nur Yildirim**, Micheal Madaio, Ken Holstein. Scaffolding Fair ML Practice to Improve Cross-Disciplinary Collaboration in Industry AI Teams. *(In Preparation)*

Workshop, Symposia, and Extended Abstracts

[W.3] **Nur Yildirim**, John Zimmerman, Sarah Preum. 2021. Technical Feasibility, Financial Viability, and Clinician Acceptance: On the many challenges to AI in Clinical Practice. In *Proceedings of The AAAI 2021 Fall Symposium on Human Partnership with Medical Artificial Intelligence*. Virtual Event.

[W.2] **Nur Yildirim**. 2020. Designing for Human-Centered Automation: A Co-Design Study with Fabrication Professionals. In *Joint Proceedings of CHI '20 Workshop on Automation Experience Across Domains*. Honolulu, HI, USA.

[W.1] **Nur Yildirim**, James McCann, John Zimmerman. 2019. Redefining Collaboration for Designing Intelligent Systems that Improve Human Experience in the Workspace. In *Joint Proceedings of CHI '19 Workshop on The Future of Work*. Glasgow, UK.

Journal Publications and Book Chapters

[J.2] Jodi Forlizzi, Qian Yang, Changhoon Oh, **Nur Yildirim**, John Zimmerman. Designing AI Products and Services: Benefits, Challenges, and Ideas for Improving Design Practice. To appear in *the Human-Centered Machine Learning book*.

[J.1] **Nur Yildirim**. 2019. Marker Rendering Techniques. In *Creative Sketching in Product Design*. Ed. Shijian, L., Qiumei, L. SendPoints Publishing, Hong Kong.

Magazine Articles

[M.1] John Zimmerman, Changhoon Oh, **Nur Yildirim**, Alex Kass, Teresa Tung, Jodi Forlizzi. 2021. UX Designers Pushing AI in the Enterprise: A Case for Adaptive UIs. *Interactions 28, 1 (December 2020), 72-77.*

Awards and Honors

2021 **CRA-W Graduate Cohort for Women**

2012 **International Design Awards**, Emerging Designer of the Year

2007-2011 **Undergraduate Scholarship Award** Community Volunteers Foundation

Teaching

2022 **05-410/05-610 User-Centered Research and Evaluation (TA)**
Carnegie Mellon University, School of Computer Science
Instructors: Raelin Musuraca and Aniket Kittur

2021 **05-674/17-200 Ethics and Policy Issues in Computing (TA)**
Carnegie Mellon University, School of Computer Science
Instructors: James Herbsleb and Laura Dabbish

Invited Talks

2019 **Design Sketching Workshop**
College of Design, University of Minnesota
Host: Prof. Barry Kudrowitz

2017 **Success Stories: From Lab To The Market (Panelist)**
7th Annual International Conference on Managing Intellectual Property in Universities
Bosphorus University, Istanbul

Recognition (selected)

2019 **International Design Awards**, Infant Products, Call Vision Infant Charm, Gold
2018 **International Design Awards**, Robotics, Assist On-Arm, Gold
2016 **German Design Award**, Packaging, SASA Water, Special Mention
2015 **Design et al Yacht and Aviation Awards**, Snow, Finalist
2015 **International Design Awards**, Home Electronics, LeapVox Videophone, Silver
2014 **A' Design Award**, Packaging, SASA I-Cube, Bronze
2014 **German Design Award**, Transportation and Public Space, TAXI Station, Nominee
2013 **IDEA**, Leisure and Recreation, Creative Wooden Creatures, Finalist
2013 **International Design Awards**, Toys, Creative Wooden Creatures, 3rd Prize

Service

2022 **Associate Chair**
ACM DIS Papers

2021-2022 **Reviewer**
ACM CHI, DIS, HRI

2020-2021 **Mentor**
CMU Graduate Application Assistance
CMU AI Mentoring Program

2019 **Student Volunteer**
CHI 2019, SCF 2019

References

John Zimmerman (Advisor)
Tang Family Professor of Artificial Intelligence and Human-Computer Interaction
Human-Computer Interaction Institute, Carnegie Mellon University
johnz@cs.cmu.edu

James McCann (Co-Advisor)
Assistant Professor
Robotics Institute, Carnegie Mellon University
jmccann@cs.cmu.edu

Jodi Forlizzi
Geschke Director and Professor
Human-Computer Interaction Institute, Carnegie Mellon University
forlizzi@cs.cmu.edu

Alex Kass
Principal Director & Labs Fellow
Accenture Technology Labs
alex.kass@accenture.com

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