Emily Tseng

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https://emtseng.me

Research Interests

I create systems, interventions, and design frameworks to measure and mitigate technology-mediated harm. I focus on high-stakes and real-world contexts where platforms, devices and algorithms are central to people's experiences of vulnerability, but where power dynamics make it difficult for individuals to overcome the harm they face (e.g., interpersonal violence, worker exploitation). I develop principled frameworks for improving safety and well-being in these contexts, and build and test systems enacting these frameworks in deep collaborations with affected communities. My work charts new paths in human-computer interaction (HCI) and computer security and privacy (S&P), towards equity and responsibility in computing.

Education

2019-now **Ph.D. at Cornell University,** *Department of Information Science*
Committee: Nicola Dell (chair), Deborah Estrin, Thomas Ristenpart, Karen Levy.

2017-19 **M.S. at Cornell Tech,** *Information Science - Health Tech* GPA: 3.9/4.0
Relevant coursework: Applied Machine Learning, Deep Learning, Natural Language Processing, Human-Computer Interaction, Interactive Device Design.
Advised by Nicola Dell and Deborah Estrin.

2010-14 **B.A. at Princeton University,** *Ecology & Evolutionary Biology (EEB)* GPA: 3.5/4.0
Concentration in Global Health and Health Policy. Studied epidemiology, journalism, and social policy, with a focus on computational modeling of infectious disease epidemics.
Advised by Bryan Grenfell and Tiffany Bogich.

Awards & Honors

2023 Inaugural Outstanding Teaching Assistant Award, Cornell Tech

2022 Rising Stars in EECS
2022 Best Paper Award, ACM CHI for [P8] *(top 1%)*

2021 Microsoft Research PhD Fellowship
Full support for 2 years of study, including tuition, health insurance and a $42,000 stipend each year.
2021 Digital Life Initiative Doctoral Fellowship *($5,000 in research funding)*

2020 Best Paper Award, ACM CSCW for [P11] *(top 1%)*
2020 Distinguished Paper Award, USENIX Security Symposium for [P12] *(top 1%)*
2020 Internet Defense Prize (third place), USENIX Security Symposium for [P12]
Included an unrestricted $40,000 research award to PIs Dell and Ristenpart.

2019 Best Paper Honorable Mention, ACM CSCW for [P16] *(top 5%)*
2019 Advocate of New York City Award, Mayor's Office to End Domestic & Gender-Based Violence

2019	Cornell University Information Science Department Fellowship *First-year fellowship awarded for exceptional preparation & promise (top 1.5% of applicants). Full support for 1 year of study, including tuition, health insurance and a $33,750 stipend.*
2017	Cornell Tech merit scholarship for Master's-level study
2014	Top Senior Thesis in Mathematical Modeling, Princeton EEB
2014	Society of Sigma Xi (scientific research honor society), Princeton University

Conference and Journal Publications (Refereed)

* indicates equal contribution.

P1. **Tseng, E.**, Bellini, R., Lee, Y.Y., Ramjit, A.M., Ristenpart, T., and Dell, N. *Data Stewardship in Clinical Computer Security: Balancing Burden and Benefit in Participatory Systems.* To appear at ACM CSCW in 2024. pdf.

P2. Bellini, R., **Tseng, E.**, Warford, N., Daffalla, A., Matthews, T., Consolvo, S., Woelfer, J.P., Kelley, P.G., Mazurek, M., Cuomo, D., Dell, N., and Ristenpart, T. *SoK: Safer Digital-Safety Research Involving At-Risk Users.* To appear at the IEEE Symposium on Security and Privacy (Oakland) in May 2024. arxiv.

P3. Malgaroli M., **Tseng E.**, Hull T., Jennings E., Choudhury T., and Simon N. 2023. *Association of Health Care Work With Anxiety and Depression During the COVID-19 Pandemic: Structural Topic Modeling Study*. JMIR AI 2023;2:e47223. DOI: 10.2196/47223. pdf. online.

P4. Dinh A, **Tseng E**, Yin AL, Estrin D, Greenwald P, and Fortenko A. 2023. *Perceptions of Augmented Reality in Remote Medical Care: Interview Study of Emergency Telemedicine Providers.* JMIR Formative Research 2023;7:e45211. pdf. online.

P5. Bensson-Ravunniarath, M., Bryan Ringel, J., Avgar, A., Wiggins, F., Lee, A., McDonald, M., Guerrero, L.R., Kallas, J., Gusoff, G., Shen, M., **Tseng, E.**, Dell, N., Czaja, S., Lindquist, L.A., and Sterling, M.R. (2023). Having a Say Matters: The Association Between Home Health Aides' Voice and Job Satisfaction. *Risk Management and Healthcare Policy*. pdf. online.

P6. Ming, J., Kuo, E.F., Go, K., **Tseng, E.**, Kallas, J., Vashistha, A., Sterling, M., and Dell, N. *"I Go Beyond and Beyond": Examining the Invisible Work of Home Health Aides.* Proc. ACM Hum.-Comput. Interact. 7, CSCW1, Article 59 (April 2023). pdf. online.

P7. **Tseng, E.*,** Adler, D.*, Moon, K.C., Young, J.Q., Kane, J.M., Moss, E., Mohr, D.C., and Choudhury, T. 2022. *Burnout and the Quantified Workplace: Tensions around Personal Sensing Interventions for Stress in Resident Physicians.* Proc. ACM Hum.-Comput. Interact., CSCW (Nov. 2022). pdf. online.

P8. **Tseng, E.,** Sabet, M., Bellini, R., Sodhi, H., Ristenpart, T., and Dell, N. 2022. *Care Infrastructures for Digital Privacy and Security in Intimate Partner Violence*. In Proc. ACM Conf. on Human Factors in Computing Systems (CHI '22). pdf. online. video. ***Best Paper Award.***

P9. Chen, N.*, McDonald, A.*, Zou, Y.*, **Tseng, E.,** Roundy, K.A., Tamersoy, A., Schaub, F., Ristenpart, T., and Dell, N. 2022. *Trauma-Informed Computing: Towards Safer Technology Experiences for All.* In Proc. ACM Conf. on Human Factors in Computing Systems (CHI '22). pdf. online.

P10. **Tseng, E.**, Freed, D., Engel, K., Ristenpart, T., and Dell, N. 2021. *A Digital Safety Dilemma: Analysis of Computer-Mediated Computer Security Interventions for Intimate Partner Violence During COVID-19.* In Proc. ACM Conf. on Human Factors in Computing Systems (CHI '21). pdf. online. video.

P11. Bellini, R., **Tseng, E.,** McDonald, N., Greenstadt, R., McCoy, D., Ristenpart, T. and Dell, N. *"So-called privacy breeds evil": Narrative Justifications for Intimate Partner Surveillance in Online Forums.* Proc. ACM Hum.-Comput. Interact., Issue CSCW. 2020. pdf. ***Best Paper Award.***

P12. **Tseng, E.**, Bellini, R., McDonald, N., Danos, M., Greenstadt, R., McCoy, D., Dell, N. and Ristenpart, T. 2020. *The Tools and Tactics Used in Intimate Partner Surveillance: An Analysis of Online Infidelity Forums.* 29th USENIX Security Symposium. pdf. online. ***Distinguished Paper Award & Internet Defense Prize, third place.***

P13. Sterling, MR, **Tseng, E,** Poon, A, Cho, J, Avgar, AC, Kern, LM, Ankuda, CK, and Dell, N. 2020. *Experiences of Home Health Care Workers in New York City During the Coronavirus Disease 2019 Pandemic: A Qualitative Analysis.* JAMA Internal Medicine. pdf. online.

P14. **Tseng, E.,** Okeke, F., Sterling, M., and Dell, N. 2020. *"We can learn. Why not?": Designing Technologies to Engender Equity for Home Health Aides.* In Proc. ACM Conf. on Human Factors in Computing Systems (CHI '20). pdf. online.

P15. Sterling, M. R., Dell, N., Piantella, B., Cho, J., Kaur, H., **Tseng, E.,** Okeke, F., Brown, M., Leung, P. B. K., Silva, A. F. , Shaw, A. L., and Kern, L. M. 2020. *Understanding the Workflow of Home Healthcare for Patients with Heart Failure.* Journal of General Internal Medicine. pdf. online.

P16. Freed, D.*, Havron, S.*, **Tseng, E.**, Gallardo A., Chatterjee, R., Ristenpart, T., and Dell, N.. 2019. *"Is my phone hacked?" Analyzing Clinical Computer Security Interventions with Survivors of Intimate Partner Violence.* Proc. ACM Hum.-Comput. Interact.: Vol. 3, Issue CSCW, Article 202. pdf. online. ***Best Paper Honorable Mention.***

P17. Okeke, F., **Tseng, E.,** Piantella, B., Brown, M., Kaur, H., Sterling, M., and Dell, N. 2019. *Technology, Home Health Care, and Heart Failure: A Qualitative Analysis with Multiple Stakeholders.* ACM SIGCAS Conference on Computing & Sustainable Societies (COMPASS 2019). pdf. online.

Teaching and Advising

Cornell University, Ithaca, NY (hybrid due to COVID-19)

Teaching Assistant, CS 1340 / INFO 1260: Choices and Consequences in Computing, Spring 2021
Profs. Jon Kleinberg and Karen Levy

Teaching Assistant, Summer School on Designing Technology for Social Impact, Summer 2021
Profs. Phoebe Sengers and Nicola Dell

Cornell Tech, New York, NY
Teaching Assistant, INFO 5375: Machine Learning in Health, Prof. Fei Wang — Spring 2023
Guest Lecturer, CS / INFO 5600: AI & Healthcare, Prof. Rajalakshmi Nandakumar — Fall 2021
Teaching Assistant, CS 5682 / INFO 6410: HCI & Design, Prof. Nicola Dell — Fall 2020
Research Internship Supervisor, Technion + Cornell Tech Intern Program — Fall 2019
Grader, CS 5740: Natural Language Processing, Prof. Yoav Artzi — Spring 2019

Weill Cornell Medical College, New York, NY
Guest Lecturer, HCPL 8101: Digital Health, Prof. Deborah Estrin — Summer 2020

Fullstack Academy, New York, NY
Software Engineering Teaching Fellow — Summer 2017
- Taught software engineering and inclusive design to 80+ students [video]

Presentations and Workshops

Invited Talks

2023 Google, Workshop on Protecting At-Risk Users, keynote
Behavioral Health Next Summit

2022 AnitaB.org Grace Hopper Celebration
University of Chicago, People and Technology Seminar
Google, Trust & Safety Research Speaker Series
Microsoft Research, Project Green Workshop: Community-Driven Innovation & Health Equity
Stanford University, HCI Seminar

2021 Microsoft Research, PhD Fellowship Showcase
Cornell Tech, Digital Life Initiative Seminar
MIT Visualization Group
CUNY School of Law, Students Against Cyber Sexual Abuse, panelist
Featured panelist on Cyber Sexual Abuse with Annie Seifullah, Lenora Claire, and Eva Galperin.

2020 United Hospital Fund/Greater New York Hospital Association Annual Symposium
MIT CSAIL Security Seminar
Facebook Research
Cornell Tech, Precision Behavioral Health Initiative

Invited Conference and Workshop Presentations

2023, Privacy Law Scholars Conference, selected for presentation
2022, Joel R. Reidenberg Northeast Privacy Scholars Workshop, selected for lightning session
2022, Care Infrastructures for Digital Security and Privacy in IPV, ACM CHI [video]
2021, A Digital Safety Dilemma, ACM CHI [video]
2020, The Tools and Tactics of Intimate Partner Violence, USENIX Security [video]

Invited Workshop Participation

2023, Consortium for the Science of Sociotechnical Systems (CSST) Summer Research Institute.
2022, Rising Stars in EECS.

2022, Data & Society, Care + Tech Convening.
2022, Human-Computer Interaction Consortium.
2022, Data & Society, The Social Life of Algorithmic Harms. Invited Discussant.
2021, CRA-WP Grad Cohort for Women *(postponed due to COVID-19, attended in 2021)*

Academic and University Service

Department Leadership

2022-23, Cornell Information Science PhD Student Mentoring Program, Organizer
2021-22, Diversity, Equity and Inclusion Strategic Committee at Cornell Tech, PhD Representative
2021-22, Faculty Hiring Committee at Cornell Tech, PhD Coordinator
2020, PhDs at Cornell Tech, Co-President

Workshop Organization

2023, ACM CSCW. *Surfacing Structural Barriers to Community-Collaborative Approaches in Human-Computer Interaction.* Panel Moderator and Co-organizer. [proposal]
2023, ACM FAccT CRAFT (24/68 selected). *Community-Collaborative Visions for Computing Research.* Panel Moderator and Co-organizer.
2021, ACM CSCW. *Subtle CSCW Traits: Identity Formation and Online Activism in the Asian Diaspora.* Co-organizer. [proposal]

Program Committee Membership

2023, ACM Designing Interactive Systems (DIS), Associate Chair, Critical Computing Subcommittee.

Reviewing

ACM CHI, Special Recognition for Outstanding Reviews, 2022, 2023, 2024
ACM CSCW, Special Recognition for Outstanding Reviews, 2021, 2022, 2023
ACM Transactions on Human-Computer Interaction (TOCHI)
ACM Fairness, Accountability, and Transparency (FAccT)
USENIX Symposium on Usable Privacy and Security (SOUPS)
Usable Security and Privacy (USEC) Symposium at Network and Distributed System Security (NDSS)
HEALTHI Workshop on Healthy Interfaces, co-located with ACM Intelligent User Interfaces (IUI)
AAAI Conference on Web and Social Media (ICWSM)
ICML Workshop on Generative AI and the Law (GenLaw@ICML)
IEEE S&P Workshop on Security for Harassment Online, Protections, and Empowerment (SecHOPE)

Mentoring

Past students (placement after mentorship)

2022, Yeuk Yu Lee (Product Lead, Streamlined)
2021, Brandt Beckerman (Data Scientist, Vevo)
2021-22, Meyhaa Buvanesh (Research Associate, XR Collaboratory at Cornell Tech)
2021, Sri Chakra Kumar (2021) (XR Systems Research Engineer, Sony R&D)
2021, Harkiran Kaur Sodhi (2021) (Product Manager, Deloitte Digital)
2021-22, Sara Wang (2021) (Data Engineer, Flatiron Health)
2020, Emilie Burton (Product Manager, Plotly)
2020-21, Kristen Engel (PhD at University of Washington School of Information)
2019, Matan Danos (MSc at Weizmann Institute of Science)

Past Research

Extracting family history from unstructured clinical notes [pdf, online]
- Developed a model (LSTM-CRF) extracting family history from unstructured text in patient forms.
- Awarded student travel grant to present at the OHNLP/BioCreativ workshop at ACM-BCB 2018.

Evaluating the usability of a personal data filtering interface for Google Takeout
PI: Deborah Estrin, Ph.D. (Cornell Tech)

Modeling the dynamics of enterovirus-71 in Taiwan: An application of the TSIR model [poster, pdf]
PI: Bryan Grenfell, Ph.D. (Princeton University)
- Developed a time-series model of the impact of vaccination on EV-71 infection rates in Taiwan.
- Awarded departmental prize for excellence in mathematical modeling.

Relevant Industry Experience

Google, remote — Fall 2023
Student Researcher with Sunny Consolvo

Microsoft Research, remote due to COVID-19 — Spring and Summer 2022
Research Intern with Mary L. Gray and the Social Media Collective

Pfizer, Inc., New York, NY
Summer Associate, Digital Health Product Development — Summer 2018
- Synthesized user stories and product requirements for a care navigation tool for the Welsh NHS.

Biomeme, Inc., Philadelphia, PA
Product & Business Development Associate — 2014 - 2016
- Developed an at-home sexual health diagnostic for a national reproductive healthcare provider.
- Piloted a point-of-care influenza diagnostic with a clinic network in Nairobi, Kenya.
- Conducted UX studies to guide development of a consumer-facing tool for personal DNA analysis.

The Daily Princetonian, Princeton, NJ
Managing Editor — 2013 - 2014
- Led 100+ staff of a collegiate news organization publishing in print 5x/week and online 24/7.
- Built web and data journalism departments, and expanded the paper's multimedia capabilities.

Oxford University Clinical Research Unit (OUCRU), Ho Chi Minh City, Vietnam
Research Intern, Gates Foundation Global Health Grand Challenge — Summer 2013
- Assisted ongoing clinical studies at a tertiary tuberculosis hospital.

Doctors Without Borders / Medecins Sans Frontieres (MSF), New York, NY
Editorial & Multimedia Intern — Summer 2011, 2012
- Produced audio, video & web features on MSF field staff at humanitarian aid sites worldwide.