Emily Tseng

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Research Interests

I study how digital technology facilitates harms, with a focus on enabling safe and consentful research with impacted communities. My research builds on techniques in *human-computer interaction* and *computational social science* to design, build, and deploy novel sociotechnical systems in real-world contexts, with the goal of improving conditions for people marginalized within society.

Education

2019-now   **Ph.D. at Cornell University,** *Department of Information Science*
Committee: Nicola Dell (chair), Deborah Estrin, Tom 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*   GPA: 3.5/4.0
Concentration in Global Health and Health Policy. Studied epidemiology, journalism and social policy with a focus on predictive modeling of infectious disease epidemics.
Advised by Bryan Grenfell and Tiffany Bogich.

Awards & Honors

2022	Rising Stars in EECS
2022	Best Paper Award, ACM CHI
2021	Microsoft Research PhD Fellowship
2021	Digital Life Initiative Doctoral Fellowship
2020	Best Paper Award, ACM CSCW
2020	Distinguished Paper Award, USENIX Security Symposium
2020	Internet Defense Prize (third place), USENIX Security Symposium
2020	CRA-WP Grad Cohort for Women *(postponed due to COVID-19, attended in 2021)*
2019	Best Paper Honorable Mention, ACM CSCW
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).
2017	Cornell Tech merit scholarship for Master's-level study
2014	Top Senior Thesis in Mathematical Modeling, Princeton University Department of Ecology & Evolutionary Biology
2014	Society of Sigma Xi (scientific research honor society), Princeton University

Refereed Conference and Journal Publications

* indicates equal contribution, listed in alphabetical order by last name.

1. Dinh A, **Tseng E**, Yin AL, Estrin D, Greenwald P, Fortenko A. 2023. *Perceptions of Augmented Reality in Remote Medical Care: Interview Study of Emergency Telemedicine Providers.* JMIR Formative Research. 16/02/2023:45211 (in press)

2. Adler, D.*, **Tseng, E.***, 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](#).

3. 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.* ACM CSCW 2022 (in press).

4. **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.

5. Chen, J.X.*, 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](#).

6. **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](#).

7. 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.

8. **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 and Internet Defense Prize, third place.

9. Sterling, MR, **Tseng, E**, Poon, A, Cho, J, Avgar, AC, Kern, LM, Ankuda, CK, 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](#).

10. **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](#).

11. 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., Kern, L. M. 2020. *Understanding the Workflow of Home Healthcare for Patients with Heart Failure.* Journal of General Internal Medicine. pdf. online.

12. 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.***

13. 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, remote due to COVID-19

Guest Lecturer, CS / INFO 5600: AI & Healthcare, Prof. Rajalakshmi Nandakumar	Fall 2021
Teaching Assistant, Summer School on Designing Technology for Social Impact	Summer 2021
Teaching Assistant, CS 1340 / INFO 1260: Choices and Consequences in Computing, Profs. Jon Kleinberg and Karen Levy	Spring 2021
Teaching Assistant, CS 5682 / INFO 6410: HCI & Design, Prof. Nicola Dell	Fall 2020

Cornell Tech, New York, NY

Teaching Assistant, INFO 5375: Machine Learning in Health, Prof. Fei Wang	Spring 2023
Teaching Assistant, INFO 6940: Technology & Social Justice, Prof. Nicola Dell	Spring 2020
Research Internship Supervisor, Technion + Cornell Tech Intern Program	Fall 2019
Grader, CS 5740: Natural Language Processing, Prof. Yoav Artzi	Spring 2019
Lead Teaching Assistant, Product Studio, Prof. Deborah Estrin	Fall 2018

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 and mentored 80+ students at a selective software engineering bootcamp.
- Delivered 10-minute talk on inclusive design and web accessibility [video]

Presentations
Invited Talks
2022   University of Chicago, People and Technology Seminar
          AnitaB.org Grace Hopper Celebration, Research Showcase
          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

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

Conference and Workshop Talks
2022, Joel R. Reidenberg Northeast Privacy Scholars Conference, 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 Symposium [video]

Academic and University Service
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
2021, CHI, Student Volunteer (fully remote conference)
2020, PhDs at Cornell Tech, Co-President

Workshops
2022, Human-Computer Interaction Consortium. Student Participant.
2022, Data & Society, The Social Life of Algorithmic Harms. Discussant.
2021, ACM CSCW, Subtle CSCW Traits: Tensions Around Identity Formation and Online Activism in the Asian Diaspora, Organizer. [proposal]

Reviewing and Program Committee Membership
ACM Human Factors in Computing Systems (CHI)
    Special Recognition for Outstanding Reviews, 2022, 2023
ACM Computer Supported Cooperative Work and Social Computing (CSCW)
    Special Recognition for Outstanding Reviews, 2021, 2022
ACM Designing Interactive Systems (DIS)
ACM Fairness, Accountability, and Transparency (FAccT)
ACM Transactions on Human-Computer Interaction (TOCHI)
USENIX Symposium on Usable Privacy and Security (SOUPS)
HEALTHI Workshop on Healthy Interfaces, co-located with ACM Intelligent User Interfaces (IUI)
Usable Security and Privacy (USEC) Symposium, co-located with the Internet Society's Network and
    Distributed System Security (NDSS) Symposium
AAAI Conference on Web and Social Media (ICWSM)

Past Research
Extracting family history from unstructured clinical notes
- 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
PI: Deborah Estrin, Ph.D. (Cornell Tech)
- Usability study of an interface for filtering sensitive data from a Google Takeout.

Modeling the dynamics of enterovirus-71 in Taiwan: An application of the TSIR model
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 [[poster]].

Relevant Industry Experience

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

Pfizer, Inc., New York, NY

Summer Associate   Summer 2018
- Led a team of UX researchers and technologists to synthesize user stories, product requirements and storyboards for a care navigation product addressing health disparities within the Welsh NHS.
- Interviewed domain experts on the feasibility of a consumer voice product for patient support.

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   Summer 2013
- Conducted literature reviews, performed data analyses (R) and mapped patient enrollment (GIS, Illustrator) for ongoing clinical studies at a tertiary tuberculosis hospital.
- Funded by the Gates Foundation Global Health Grand Challenge.

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.

Skills

- **Design** | Interviewing, contextual enquiry, survey design, thematic analysis, prototyping (Sketch, Photoshop, Illustrator, InDesign, InVision, Figma)

- **Data Science** | Quantitative analysis and statistical modeling (Python, R, MATLAB), modern machine learning (scikit-learn, Dynet, Tensorflow, Pytorch)

- **Software Development** | Full-stack software engineering (JavaScript, Node.JS, React, HTML, CSS/Sass), Agile development, cloud deployment tools (AWS, Heroku), Git