

Dan Adler

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RESEARCH INTERESTS

My goal is for data to improve clinical care for everyone. Towards this goal, I develop novel data-driven technologies and AI models by rigorously studying their high-stakes and complex clinical applications. I focus on data and models for monitoring highly heterogeneous chronic conditions, where data present diversely across patients making it challenging to develop technologies that reliably and equitably support clinical care. In graduate school, I have specifically developed novel passive sensing technologies that repurpose the behavioral and physiological data generated and gathered by consumer devices to monitor symptoms of mental illness. My research is inherently interdisciplinary, and sits at the intersection of human-computer interaction (HCI), ubiquitous computing, responsible AI, and digital health. All of my research is greatly informed by my time working in healthcare, both before and during graduate school.

EDUCATION

Doctor of Philosophy 2019 - 2025

Cornell University

Information Science

Committee: Tanzeem Choudhury (Chair), Deborah Estrin, Fei Wang

Master of Science 2019 - 2022

Cornell University

Information Science

Bachelor of Science, GPA 3.91/4.00 2012 - 2016

The Johns Hopkins University

Double Major in Biomedical Engineering and Applied Mathematics and Statistics

Minor in Computer Science (CS). Specializations in computational biology and optimization.

HONORS AND AWARDS

2024 UbiComp/IMWUT Gaetano Borriello Outstanding Student Award Finalist

2024 Siegel Public Interest Technology PhD Impact Fellow

Supports summer study, including tuition, health insurance, and a \$13,665 stipend

2022 Digital Life Initiative Doctoral Fellow *\$5,000 research funding*

2022 Cornell Machine Learning in Medicine Best Poster Award

2022 Cornell InfoSci Departmental Service Award

2021 National Science Foundation Graduate Research Fellow

Supports 3 years of study, including tuition, health insurance, and a \$37,000 annual stipend

2016 Biomedical Engineering Richard J. Johns Academic Achievement Award
2016 Biomedical Engineering Departmental Honors
2016 Applied Mathematics and Statistics Departmental Honors
2016 Johns Hopkins University Honors
2016 Upsilon Pi Epsilon Computing and Information Honor Society, The Johns Hopkins University

2015 Applied Mathematics and Statistics Mathematical Modeling Award
2015 Tau Beta Pi Engineering Honors Society, The Johns Hopkins University

SELECTED PUBLICATIONS

* *Indicates equal contribution.*

1. Daoming Lyu, **Daniel A. Adler**, Chang Su, Shane Sacco, Kun Chen, Tanzeem Choudhury, Robert Aseltine and Fei Wang. Machine learning in mental health research: a scoping review. *Psychiatry Research*. (In revisions)
2. **Daniel A. Adler**, Yuewen Yang, Thalia Viranda, Xuhai Xu, David C. Mohr, Anna R. Van Meter, Julia C. Tartaglia, Nicholas C. Jacobson, Fei Wang, Deborah Estrin and Tanzeem Choudhury. Beyond Detection: Towards Actionable Sensing Research in Clinical Mental Healthcare. *Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies*. (Accepted pending minor revisions)
3. Stuart E. Middleton, Alec Banks, **Daniel A. Adler**, Sarah Ashbridge, Ana Basiri, Brant Chee, Patrick Hinton, Daniel Leightley and Maria Liakata. AI for Defence: Readiness, Resilience and Mental Health. *The RUSI Journal*. (Accepted)
4. **Daniel A. Adler** and Tanzeem Choudhury. Ubiquitous Computing in Action: Infrastructure to Support Sensing and Mental Health Research in Practice. Companion of the 2024 ACM International Joint Conference on Pervasive and Ubiquitous Computing. 2024. [[Online](#)]
5. **Daniel A. Adler**, Caitlin A. Stamatis, Jonah Meyerhoff, David C. Mohr, Fei Wang, Gabriel J. Aranovich, Srijan Sen and Tanzeem Choudhury. Measuring algorithmic bias to analyze the reliability of AI tools that predict depression risk using smartphone sensed-behavioral data. *npj Mental Health Research*. 2024. [[PDF](#), [Online](#)]
6. Angel H.-C. Hwang, **Daniel A. Adler**, Meir Friedenber and Qian Yang. Societal-Scale Human-AI Interaction Design? How Hospitals and Companies are Integrating Pervasive Sensing into Mental Healthcare. *Proceedings of the CHI Conference on Human Factors in Computing Systems*. 2024. [[Online](#)]
7. Yuewen Yang*, Thalia Viranda*, Anna R. Van Meter, Tanzeem Choudhury and **Daniel A. Adler**. Exploring Opportunities to Augment Psychotherapy with Language Models. Extended Abstracts of the CHI Conference on Human Factors in Computing Systems. 2024. [[Online](#)]
8. Neha Manjunath*, Ze Yuan Li*, Eunsol Soul Choi*, Srijan Sen, Fei Wang and **Daniel A. Adler**. Can Data Augmentation Improve Daily Mood Prediction from Wearable Data? An Empirical Study. Adjunct Proceedings of the ACM International Joint Conference on Pervasive and Ubiquitous Computing. 2023. [[Online](#)]

9. Jodie Nghiem*, **Daniel A. Adler***, Deborah Estrin, Cecilia Livesey and Tanzeem Choudhury. Understanding Mental Health Clinicians' Perceptions and Concerns Regarding Using Passive Patient-generated Health Data for Clinical Decision Making: a Qualitative, Semi-structured Interview Study. JMIR Formative Research. 2023. [[PDF](#), [Online](#)]
10. **Daniel A. Adler***, Emily Tseng*, Khatiya C. Moon, John Q. Young, John M. Kane, Emanuel Moss, David C. Mohr and Tanzeem Choudhury. Burnout and the Quantified Workplace: Tensions around Personal Sensing Interventions for Stress in Resident Physicians. Proc ACM Hum-Comput Interact., CSCW. 2022. [[PDF](#), [Online](#)]
11. **Daniel A. Adler**, Fei Wang, David C. Mohr and Tanzeem Choudhury. Machine learning for passive mental health symptom prediction: Generalization across different longitudinal mobile sensing studies. PLOS ONE. 2022. [[PDF](#), [Online](#)]
12. Lisa Militello, Michael Sobolev, Fabian Okeke, **Daniel A. Adler** and Inbal Nahum-Shani. Digital Prompts to Increase Engagement With the Headspace App and for Stress Regulation Among Parents: Feasibility Study. JMIR Formative Research. 2022. [[PDF](#), [Online](#)]
13. **Daniel A. Adler**, Fei Wang, David C. Mohr, Deborah Estrin, Cecilia Livesey and Tanzeem Choudhury. A call for open data to develop mental health digital biomarkers. BJPsych Open. 2022. [[PDF](#), [Online](#)]
14. **Daniel A. Adler**, Vincent W.-S. Tseng, Gengmo Qi, Joseph Scarpa, Srijan Sen and Tanzeem Choudhury. Identifying Mobile Sensing Indicators of Stress-Resilience. Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies. 2021. [[PDF](#), [Online](#), [Video](#)]
15. **Daniel A Adler**, Dror Ben-Zeev, Vincent W.-S. Tseng, John M. Kane, Andrew T. Campbell, Marta Hauser, Emily A. Scherer and Tanzeem Choudhury. Predicting Early Warning Signs of Psychotic Relapse From Passive Sensing Data: An Approach Using Encoder-Decoder Neural Networks. JMIR mHealth and uHealth. [[PDF](#), [Online](#)]

PRESENTATIONS

Invited Talks

2024 Northwestern University, HABits Lab Group
 2024 Northeastern University, UbiWell Lab Group
 2024 Mila, AI and Health Reading Group
 2023 Northwestern University, CBITs Seminar
 2023 UK Defence Science and Technology Laboratory, Mental Health Workshop
 2023 Cornell Tech, Digital Life Initiative Seminar [[Video](#)]
 2023 Cornell Tech, Behavioral Health Next Summit
 2022 The Alan Turing Institute, Data Science for Mental Health Special Interest Group [[Video](#)]
 2020 Cornell University, Artificial Intelligence Seminar

Invited Conference Presentations

2024 ACM UbiComp, Doctoral Colloquium Poster
 2024 Conference for Health, Inference and Learning, Lightning Talk and Doctoral Colloquium Poster
 2022 Burnout and the Quantified Workplace, ACM CSCW [[Video](#)]
 2022 Nature Medicine in a Virtual Age Conference

2022 Identifying Mobile Sensing Indicators of Stress-Resilience, ACM UbiComp
2022 Cornell Machine Learning in Medicine Symposium, Poster

Invited Workshop Participation

2024 ACM UbiComp, Doctoral Colloquium
2024 Conference for Health, Inference and Learning, Doctoral Colloquium
2024 Human-Computer Interaction Consortium (HCIC)
2023 ACM CHI, Bridging HCI and Implementation Science
2022 CSCW North East Meetup, Panelist

TEACHING EXPERIENCE

Cornell Tech, New York, NY

Spring 2024, Guest Lecturer, INFO 6120: Ubiquitous Computing, Prof. Tanzeem Choudhury
Spring 2024, Guest Lecturer, INFO 5375: Machine Learning for Health, Prof. Fei Wang
Fall 2023, Lead Instructor, INFO 5610: Sensors, Systems and Algorithms for Precision Behavioral Health, Prof. Tanzeem Choudhury [[Syllabus](#)]
Spring 2023, Guest Lecturer, INFO 5375: Health Tech Oriented Machine Learning, Prof. Fei Wang
Spring 2022, Teaching Assistant, INFO 5375: Health Tech Oriented Machine Learning, Prof. Fei Wang [[Course Website](#)]
Fall 2020, Teaching Assistant, INFO 5610: Sensors, Systems and Algorithms for Precision Behavioral Health, Prof. Tanzeem Choudhury [[Syllabus](#)]
Spring 2020, Teaching Assistant, CS 5304: Data Science in the Wild, Prof. Rajalakshmi Nandakumar

Coder Academy, Sydney, Australia

Spring 2019, Lead Instructor and Course Developer, Australia Post Tech Academy
Three-month intensive bootcamp with 20 Australia Post employees covering topics including full-stack web development and data analysis
Spring 2019, Lead Instructor and Course Developer, Data Science Masterclasses
Three monthly masterclasses for industry professionals on various applied machine learning topics

TEALS (Microsoft Philanthropies), New York, NY

Spring 2018, Computer Science Teacher, Brooklyn Preparatory High School
Fall 2017, Computer Science Teacher, Brooklyn Preparatory High School
Semester-long high school programming courses with ~20 students

PricewaterhouseCoopers (PwC), New York, NY

Spring 2018, Instructor and Course Developer, Python Bootcamp
Fall 2017, Instructor and Course Developer, Python Bootcamp
Spring 2017, Instructor and Course Developer, R Bootcamp
Week-long intensive bootcamps to upskill 20-30 PwC employees in data analysis with Python and R

The Johns Hopkins University, Baltimore, MD

Spring 2016, Teaching Assistant, BME 580.222: Signals, Systems and Controls, Profs. Michael Miller and Sridevi Sarma
Fall 2015, Teaching Assistant, AMS 580.111: Statistical Analysis 1, Prof. Avanti Athreya

SERVICE

Campus Leadership

PhDs at Cornell Tech (PACT) Hiring Committee Representative 2022
Information Science Graduate Student Association (ISGSA) Admissions Representative 2020 - 2021
Information Science Student-Applicant Reading Program Organizer 2020
Tau Beta Pi Engineering Honors Society Maryland Alpha (JHU) Chapter President 2015 - 2016

Workshop Organizing

UbiComp Mental Health Workshop Co-leader 2023, 2024
UbiComp Mental Health Workshop Co-organizer 2022

Associate Chair

ACM Conference on Human Factors in Computing Systems (CHI) 2025

Technical Program Committee

Conference on Affective Computing and Intelligent Interaction (ACII) 2024
International Conference on Multimodal Interaction (ICMI) 2023, 2024
KDD Health Day 2022

Reviewer

PACM on Interactive, Mobile, Wearable and Ubiquitous Technologies (IMWUT/UbiComp)
PACM on Human-Computer Interaction (CSCW)
ACM Conference on Human Factors in Computing Systems (CHI)
ACM Transactions on Computer-Human Interaction
ACM Transactions on Computing for Healthcare
ACM Symposium on User Interface Software and Technology (UIST)
npj Digital Medicine
npj Mental Health Research
Journal of Biomedical Informatics
Journal of Medical Internet Research (JMIR)
JAMA Psychiatry
Frontiers in Psychiatry
PLOS ONE

Community Service

Big Brothers Big Sisters (BBBS) of NYC 2021, 2022
Zucker Hillside Hospital at Northwell Health 2019, 2020
TEALS (Microsoft Philanthropies) Course Instructor 2017, 2018
THREAD Head of Family 2015, 2016

MENTORSHIP

Past Students (Current Placement)

2023 - 2024 Thalia Viranda (PhD Student at Cornell Tech)
2023 - 2024 Yuewen Yang (Master's Student at Cornell Tech)
2023 Grace Gao (Software Engineer at Affirm)
2023 Yiheng Hua (Software Engineer at Amazon)

2023 Xinyue Cao (Seeking data science roles)
2023 Hongjiao Zhang (Master's Student at Cornell Tech)
2022 - 2024 Jodie Nghiem (Psychiatry Resident at Weill Cornell Medicine)
2022 - 2023 Ze Yuan Li (Senior AI/ML Engineer at Optum)
2022 - 2023 Soul Choi (Data Scientist at Stealth Startup)
2022 - 2023 Neha Manjunath (Research Engineer at Hippocratic AI)
2022 Sam Welsh (Software Engineer at Curative Sound)
2021 Sanika Bapat (Senior Artificial Intelligence Researcher at MITRE)
2021 Grace Le (Software Development Engineer at Amazon)

MEDIA

2024 NIMH, Smartphone Data May Not Reliably Predict Depression Risk in Diverse Groups [[Online](#)]
2024 Cornell Chronicle, AI Tools Reveal Complexity of Mental Health Measurement [[Online](#)]
2022 Cornell Chronicle, Personal sensing at work: tracking burnout, balancing privacy [[Online](#)]
2022 Fast Company, AI must be developed responsibly to improve mental health outcomes [[Online](#)]
2020 Cornell Chronicle, Smartphone data helps predict schizophrenia relapses [[Online](#)]

GRANT WRITING EXPERIENCE

Contributed to writing and preliminary analyses on the following grants:

2024 NIH R01, PIs Emma Elizabeth McGinty and Jiani Yu. Not funded but competitive.
2024 ARPA-H, PIs Tanzeem Choudhury and Fei Wang. Not funded.
2022 Optum Labs, PIs Deborah Estrin, Fei Wang, and Emma Pierson. Funded \$1M for 2 years.
2022 Cornell Seed Grant, PIs Qian Yang and Fei Wang. Funded, \$75,000 for 1 year.
2022 Cornell Seed Grant, PIs Tanzeem Choudhury and Fei Wang. Funded \$75,000 for 1 year.
2021 Microsoft Cloud Computing Grant, PI Tanzeem Choudhury. Funded \$45,000 over 3 years.
2020 NIH R01, PI Tanzeem Choudhury. Not funded.

PATENTS

17/551,994: System implementing encoder-decoder neural network adapted to prediction in behavioral and/or physiological contexts

18/026,371: System implementing generative adversarial network adapted to prediction in behavioral and/or physiological contexts

RELEVANT INDUSTRY EXPERIENCE

Graduate Intern 2024
Medicare Rights Center
Co-designed and built a conversational AI tool with Medicare Rights' helpline staff/volunteers. The tool identifies and summarizes information about public health insurance benefits to support staff/volunteers working on the helpline.

Graduate Intern 2021 - 2022

Optum Labs, UnitedHealth Group (UHG)

Developed data pipelines integrate clinical and non-clinical data into collaborative care programs to improve mental health risk stratification and treatment outcomes.

Educator & Course Developer

2018 - 2019

Coder Academy

Developed and taught various courses covering topics including full-stack web development, data analysis, applied machine learning, and AI.

Associate

2015 - 2018

Advisory Analytics, PricewaterhouseCoopers (PwC)

Developed public health investment strategies for health systems by analyzing public and proprietary clinical and SDoH data with statistical, machine learning, and simulation models.

PRIOR RESEARCH EXPERIENCE

The Johns Hopkins University

2014 - 2016

Prof. Anton Dahbura (Computer Science)

Developed automated scheduling algorithms using linear optimization for medical clinics in the Baltimore area. [[Poster](#)]

Kennedy Krieger Institute

2012 - 2014

Prof. Shilpa Kadam

Modeled the effects of brain inflammation on neurodegeneration using continuous video, electroencephalogram (EEG), and electromyogram (EMG). Identified associations between inflammation and circadian rhythm disruption. [[PDF](#), [Online](#)]

REFERENCES

Tanzeem Choudhury, PhD

Roger and Joelle Burnell Professor in Integrated Health and Technology
Cornell University, Department of Information Science
tanzeem.choudhury@cornell.edu

Andrew T. Campbell, PhD

Albert Bradley 1915 Third Century Professor
Dartmouth College, Department of Computer Science
andrew.t.campbell@dartmouth.edu

Deborah Estrin, PhD

Associate Dean and Robert V. Tishman '37 Professor
Cornell University, Department of Computer Science
destrin@cornell.edu

David C. Mohr, PhD

Professor of Preventive Medicine
Director, Center for Behavioral Intervention Technologies (CBITs)

Northwestern University, Feinberg School of Medicine
d-mohr@northwestern.edu

Fei Wang, PhD

Professor of Health Informatics

Director, Institute of Artificial Intelligence for Digital Health

Weill Cornell Medicine, Department of Population Health Sciences

few2001@med.cornell.edu