

# EDISON THOMAZ

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## RESEARCH

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My research focuses on the computational perception of human signals (e.g., behavioral, emotional, physiological) while leveraging ubiquitous and wearable sensing. A core area of interest is studying systems and methods for recognizing and modeling the entire span of people's everyday activities and context. This work is at the intersection of ubiquitous computing, human-computer interaction, human-centered machine learning, and signal processing. I am particularly motivated by applications in the domain of health and personalized medicine such as building health models and tools that can characterize and forecast states of health and disease.

## EDUCATION

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**Georgia Institute of Technology, School of Interactive Computing** 2010 - 2016  
Ph.D. in Human-Centered Computing (HCC)  
Advisors: Gregory Abowd and Irfan Essa  
Thesis: Automatic eating detection in real-world settings with commodity sensing

**Massachusetts Institute of Technology, MIT Media Lab** 2000 - 2002  
S.M. Media Arts and Sciences  
Advisor: Andy Lippman  
Thesis: Developing distributed contextualized communication services

**The University of Texas at Austin** 1995 - 1999  
B.A. Computer Science  
Advisor: Greg Lavender, Harrick Vin  
Area: Human-Computer Interaction

## PROFESSIONAL EXPERIENCE

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**Assistant Professor** 2018 - Present  
Department of Electrical and Computer Engineering  
The University of Texas at Austin, Austin, TX

**Research Assistant Professor** 2016 - 2018  
Department of Electrical and Computer Engineering and School of Information  
The University of Texas at Austin, Austin, TX

**Founder and Principal** 2007 - 2010  
Slife Labs, LLC, Atlanta, GA

**Research Scientist** 2004 - 2007  
France Télécom Research and Development, Cambridge, MA

**Program Manager** 2002 - 2004  
Windows Media Division  
Microsoft Corporation, Redmond, WA

**Software Engineer** 1999 - 2000  
Publicis Sapient, Austin, TX

## HONORS AND AWARDS

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**2017** Google Faculty Research Award  
**2015** Best Paper Honorable Mention, ACM CHI  
Best Short Paper, ACM IUI  
**2014** George Fellow, Georgia Institute of Technology  
**2001** MIT Media Lab British Telecom Fellowship  
**2000** MIT Media Lab British Telecom Fellowship

## JOURNAL PUBLICATIONS

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- J8**     **Automatic, Wearable-Based, In-Field Eating Detection Approaches for Public Health Research: a Scoping Review**  
Brooke M. Bell, Ridwan Alam, Nabil Alshurafa, *Edison Thomaz*, Abu S. Mondol, Kayla de la Haye, John A. Stankovic, John Lach, Donna Spruijt-Metz  
npj Digital Medicine 2020
- J7**     **Improving Fluid Intake Behavior Among Patients With Kidney Stones: Understanding Patients' Experiences and Acceptability of Digital Health Technology**  
Necole Streeper, Alexandra Dubnansky, Ashley Sanders, Kathleen Lehman, *Edison Thomaz*, David Conroy  
Urology 2019
- J6**     **Leveraging Active Learning and Conditional Mutual Information to Minimize Data Annotation in Human Activity Recognition**  
Rebecca Adaimi, *Edison Thomaz*  
PACM IMWUT 2019
- J5**     **Role of Digital Games in Self-Management of Cardiovascular Diseases: A Scoping Review**  
Kavita Radhakrishnan, Thomas Baranowski, Christine Julien, *Edison Thomaz*, Miyong Kim  
Games For Health Journal 2019
- J4**     **Audio-Based Activities of Daily Living (ADL) Recognition with Large-Scale Acoustic Embeddings from Online Videos**  
Dawei Liang, *Edison Thomaz*  
PACM IMWUT 2019
- J3**     **Detecting Eating Episodes by Tracking Jawbone Movements with a Non-Contact Wearable Sensor**  
Keum San Chun, Sarnab Bhattacharya, *Edison Thomaz*  
PACM IMWUT 2018
- J2**     **Mitigating Bystander Privacy Concerns in Egocentric Activity Recognition with Deep Learning and Intentional Image Degradation**  
Mariella Dimiccoli, Juan Marín and *Edison Thomaz*  
PACM IMWUT 2018
- J1**     **Semi-Automated Tracking: A Balanced Approach for Self-Monitoring Applications**  
Eun Kyoung Choe, Saeed Abdullah, Mash Rabbi M, *Edison Thomaz*, Daniel Epstein, Felicia Cordeiro, Matthew Kay, Gregory Abowd, Tanzeem Choudhury, James Fogarty, Brian Lee, Mark Matthews, Julie Kientz  
IEEE Pervasive Computing 2017

## BOOK CHAPTERS

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- BC1**     **Challenges and Opportunities in Automated Detection of Eating Activity**  
*Edison Thomaz*, Irfan Essa, Gregory D. Abowd  
Mobile Health, pp. 151-174. Springer, Cham, 2017

- C14**     **Characterizing the Effect of Audio Degradation on Privacy Perception And Inference Performance in Audio-Based Human Activity Recognition**  
Dawei Liang, Wenting Song and *Edison Thomaz*  
MobileHCI 2020
- C13**     **Eating Episode Detection with Jawbone-Mounted Inertial Sensing**  
Keum San Chun, Hyoyoung Jeong, Rebecca Adaimi, and *Edison Thomaz*  
IEEE EMBC 2020
- C12**     **Intraoral Temperature and Inertial Sensing in Automated Dietary Assessment: A Feasibility Study**  
Keum San Chun, Sarnab Bhattacharya, Caroline Dolbear, Jordon Kashanchi, *Edison Thomaz*  
ISWC 2020
- C12**     **Towards a Generalizable Method for Detecting Fluid Intake with Wrist-Mounted Sensors and Adaptive Segmentation**  
Keum San Chun, Ashley B. Sanders, Rebecca Adaimi, Necole Streeper, David E. Conroy, *Edison Thomaz*  
IUI 2019
- C11**     **Hierarchical Span-Based Conditional Random Fields for Labeling and Segmenting Events in Wearable Sensor Data Streams**  
Roy Adams, Nazir Saleheen, *Edison Thomaz*, Abhinav Parate, Santosh Kumar, Benjamin Marlin  
ICML 2016
- C10**     **Detecting Mastication: A Wearable Approach**  
Abdelkareem Bedri, Apoorva Verlekar, *Edison Thomaz*, Valerie Avva, Thad Starner  
ICMI 2015
- C9**       **Predicting Daily Activities From Egocentric Images Using Deep Learning**  
Daniel Castro, Steve Hickson, Vinay Bettadapura, *Edison Thomaz*, Gregory D. Abowd, Henrik Christensen, Irfan Essa  
ISWC 2015
- C8**       **A Wearable System for Detecting Eating Activities with Proximity Sensors in the Outer Ear**  
Abdelkareem Bedri, Apoorva Verlekar, *Edison Thomaz*, Valerie Avva, Thad Starner  
ISWC 2015
- C7**       **A Practical Approach for Recognizing Eating Moments with Wrist-Mounted Inertial Sensing**  
*Edison Thomaz*, Irfan Essa, Gregory D. Abowd  
UbiComp 2015
- C6**       **Barriers and Negative Nudges: Exploring Challenges in Food Journaling**  
Felicia Cordeiro, Daniel A. Epstein, *Edison Thomaz*, Elizabeth Bales, Arvind K. Jagannathan, Gregory D. Abowd, James Fogarty  
CHI 2015

## CONFERENCE PUBLICATIONS

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- C5**     **Inferring Meal Eating Activities in Real World Settings from Ambient Sounds: A Feasibility Study**  
*Edison Thomaz, Cheng Zhang, Irfan Essa, Gregory D. Abowd*  
IUI 2015
- C4**     **Leveraging Context to Support Automated Food Recognition in Restaurants**  
Vinay Bettadapura, *Edison Thomaz*, Aman Parnami, Gregory D. Abowd, Irfan Essa  
WACV 2015
- C3**     **Feasibility of Identifying Eating Moments from First-Person Images Leveraging Human Computation**  
*Edison Thomaz*, Aman Parnami, Irfan Essa, Gregory D. Abowd  
SenseCam and Pervasive Imaging 2013
- C2**     **Technological Approaches for Addressing Privacy Concerns When Recognizing Eating Behaviors with Wearable Cameras**  
*Edison Thomaz*, Aman Parnami, Jonathan Bidwell, Irfan Essa, Gregory D. Abowd  
UbiComp 2013
- C1**     **Recognizing Water-Based Activities in the Home Through Infrastructure-Mediated Sensing**  
*Edison Thomaz*, Vinay Bettadapura, Gabriel Reyes, Megha Sandesh, Grant Schindler, Thomas Ploetz, Gregory Abowd, Irfan Essa  
UbiComp 2012

## WORKSHOPS, POSTERS AND PRESENTATIONS

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- W10**    **Activiome: A System for Annotating First-Person Photos and Multimodal Activity Sensor Data**  
*Edison Thomaz*  
ARDOUS Workshop, PerCom 2020
- W9**     **Usability of a Hands-Free Voice Input Interface for Ecological Momentary Assessment**  
Rebecca Adaimi, Ka Tai Ho, and *Edison Thomaz*  
ARDOUS Workshop, PerCom 2020
- W8**     **Use of SipIT Intervention to Reduce Common Perceived Barriers to Increasing Fluid Intake among Adult Patients with Kidney Stones**  
Ashley West, Necole Streeper, *Edison Thomaz*, David Conroy  
"Using digital health interventions to promote healthy habit formation" Symposium, Society for Behavioral Medicine 2020 (Conference Cancelled)
- W7**     **SipIT: A Digital Health Just-in-Time Intervention to Increase Fluid Consumption Habits among Patients with Kidney Stones**  
Necole Streeper, Deborah Brunke-Reese, *Edison Thomaz*, Ashley Sanders, David Conroy  
World Congress of Endourology 2019 (Poster)
- W6**     **Protocol to Develop a Digital Biomarker to Detect Drinking Behavior among Patients with Kidney Stones Using Wrist-Worn Inertial Sensor**  
Necole Streeper, *Edison Thomaz*, Ashley Sanders, A. Dubnansky, David Conroy  
American Urological Association Annual Meeting 2019 (Poster)

## WORKSHOPS, POSTERS AND PRESENTATIONS

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- W5**     **Exploring Symmetric and Asymmetric Bimanual Eating Detection with Inertial Sensors on the Wrist**  
*Edison Thomaz, Abdelkareem Bedri, Temiloluwa Prioleau, Irfan Essa, Gregory D. Abowd*  
Digital Biomarkers Workshop, Mobisys 2017
- W4**     **Sequencing the Dietary Exposome with Semi-Automated Food Journaling Techniques**  
*Edison Thomaz*  
HCIC 2013
- W3**     **A Human-Centered Conceptual Model for Personal Health Informatics Data**  
*Edison Thomaz*  
"Personal Informatics in the Wild: Hacking Habits for Health and Happiness" Workshop, CHI 2013
- W2**     **Hydrostream: A Platform for Collecting, Annotating and Analyzing Water Pressure for Health Applications**  
*Edison Thomaz, Thomas Ploetz, Irfan Essa, Gregory D. Abowd*  
"Personal Informatics in Practice Workshop", CHI 2012
- W1**     **Interactive Techniques for Labeling Activities Of Daily Living to Assist Machine Learning**  
*Edison Thomaz, Thomas Ploetz, Irfan Essa, Gregory D. Abowd*  
Workshop on Interactive Systems in Healthcare (WISH) 2011

## ADVISING AND MENTORING

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- Ph.D. Students**     Keum San Chun (2016-Present)  
Sarnab Bhattacharya (2017-Present)  
Rebecca Adaimi (2017-Present)  
Dawei Liang (2018-Present)  
Xuewen Yao (2018-Present, *Co-Advised with Kaya de Barbaro*)  
Priyanka Khante (2018-Present, *Co-Advised with Kaya de Barbaro*)
- Post Doctoral**     Mariella Dimiccoli (University of Barcelona)
- Master Students**     Richard Cao, Abdelkareem Bedri (GT), David Muñoz (GT), Rushil Khurana (GT)  
Arvind Krishnaa (GT), Sahil Goyal (GT), Megha Sandesh (GT), Aman Parnami (GT)
- Undergrads**     Christopher Gill, Ka tai Ho, Andrew Yang, Rohan Balaji, Julia Romero, Howard Young  
Minsik Bang (GT), Dan Ports (MIT)

## DISSERTATION COMMITTEE

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- 2018**     Yimin Chen, Ph.D., UT Austin ME  
**2018**     Michael Motro, Ph.D., UT Austin ECE  
**2017**     Talha Khan, Ph.D., UT Austin ECE  
**2017**     Islam Akef Ebeid, Ph.D., UT Austin School of Information  
**2016**     Mustaf Rahman, Ph.D., UT Austin School of Information

## INVITED TALKS

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2020	COMOREA Workshop (Keynote), IEEE PerCom 2020
2020	Quarterly Research Series, Women's Health, Dell Medical School, UT Austin
2018	Potential Collaboration Pathways Panel, Dell Medical School, UT Austin
2018	Ambulatory Assessment Workshop, UT Austin
2018	Fostering Resilience Symposium, UT Austin
2018	UCSD COREethics Webinar, UCSD
2018	NSF Smart and Connected Health Workshop (Keynote), UT Austin
2018	Seminar, Dept. of Electrical and Computer Engineering, UT Austin
2018	Automatic Dietary Monitoring Workshop, IEEE Body Sensor Networks (BSN)
2017	NSF Smart and Connected Health Workshop (Keynote), UT Tyler
2016	Colloquium, Dept. of Psychology, UT Austin
2016	Colloquium, School of Information, UT Austin
2015	NSF College Student Health Workshop, Northwestern University
2015	Intel ISTC-PC Annual Meeting, Portland, OR
2015	Seminar, Dept. of Electrical and Computer Engineering, UT Austin
2015	Seminar, Computer Science and Engineering, UCSD
2015	Seminar, School of Interactive Computing, Georgia Tech
2014	People-Aware Computing Group, Cornell University
2013	Math and Computer Science Department Seminar, Emory University
2013	Computational Social Science Workshop, Georgia Tech
2011	Humana C3 Talk, Louisville, KY
2011	Georgia Gerontology Annual Conference, Athens, GA
2011	Georgia Tech GVU/CDC Workshop, Atlanta, GA
2011	Aware Home Seminar, Georgia Tech
2006	Modeling and Retrieval of Context Workshop (Keynote), AAAI Conference 2006

## TEACHING EXPERIENCE

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EE380L Data Mining, UT Austin ECE	2020
EE382V Activity Sensing and Recognition, UT Austin ECE	2016, 2018, 2020
UBISS 2019 Summer School, Oulu, Finland	2019
EE422C Software Design and Implementation II, UT Austin ECE	2017, 2019
INF385T Personal Informatics, UT Austin School of Information	2016-2018
CS8001/CS8002, HCC Seminar, Georgia Tech	2013

## DEPARTMENTAL COMMITTEE AND SERVICE

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Seminar Committee, UT Austin ECE	2017-2020
Humanitarian Engineering Committee, UT Austin ECE	2017-2020
Junior Faculty Search Committee, UT Austin ECE	2018
Equal Opportunity in Engineering Committee, UT Austin ECE	2016-2017
Doctoral Committee, UT Austin School of Information	2017
Diversity and Inclusion Committee, UT Austin School of Information	2017
Senior Faculty Search Committee, UT Austin ECE	2016

## PROFESSIONAL SERVICE ACTIVITIES

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<b>General</b>	Texas Wireless Summit Co-Chair, 2019
<b>Editorial Board</b>	Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies (PACM IMWUT), 2017-Present
<b>Program Committee</b>	ACM Int. Symposium on Wearable Computing (ISWC), 2017-Present IEEE Int. Conference on Pervasive Comp. and Comm. (PerCom), 2017 ACM Int. Joint Conference on Pervasive and Ubiquitous Computing (UbiComp), 2016
<b>Associate Committee</b>	ACM Human Factors in Computing Systems (CHI), Health Track, 2018
<b>Organizing Committee</b>	IEEE PerCom Workshops Co-Chair, 2020 ACM CSCW Local Arrangements Co-Chair, 2019 IEEE BSN workshop on "Automatic Dietary Monitoring", 2018 IEEE/ACM UbiComp workshop on "Disasters in Personal Informatics", 2014
<b>Session Chair</b>	IEEE PerCom Poster Chair, 2020