

## Rebecca Adaimi

US Address: Pittsburgh, Pennsylvania 15213

Homepage: [www.rebeccaadaimi.com](http://www.rebeccaadaimi.com)

Email Address: [rebecca.adaimi@utexas.edu](mailto:rebecca.adaimi@utexas.edu)

Phone Number: +15127742786



### EDUCATION

<b>From 08/17 to Present</b>	<b>University of Texas at Austin</b> MS/PhD in Electrical and Computer Engineering <u>Track</u> : Decision, Information, and Communications Engineering (DICE) <u>Advisor</u> : Dr. Edison Thomaz <u>Graduation year</u> : 2023, GPA: 3.94 <u>Affiliations</u> : Wireless, Networking & Communications Group (WNCG); Institute for Foundations of Machine Learning (IFML); Intelligent Machine Engineering Consortium (iMAGiNE) <u>Research Interests</u> : Human-centered AI, continual/lifelong learning, mobile and ubiquitous computing, modeling human activity recognition	Austin, TX
<b>From 08/17 to 12/20</b>	<b>University of Texas at Austin</b> MS in Electrical and Computer Engineering Track: Decision, Information, and Communications Engineering (DICE) Advisor: Dr. Edison Thomaz GPA: 3.94	Austin, TX
<b>From 09/13 to 06/17</b>	<b>American University of Beirut</b> Bachelor in Electrical and Computer Engineering Minor in Biomedical Engineering GPA: 4.0. Dean's Honor for 4 years	Beirut, Lebanon

### EXPERIENCE

<b>From 02/25 to Present</b>	<b>Apple Inc.</b> Position: Research Scientist Manager: Dr. Abdelkareem Bedri Team: Machine Intelligence Neural Design (part of AI/ML)	Pittsburgh, PA
<b>From 06/23 to 02/25</b>	<b>OURA Ring Inc.</b> Position: Machine Learning Data Scientist Manager: Dr. Ketan Patel Team: Health Sensing Team	Austin, TX (remote)
<b>From 05/22 to 09/22</b>	<b>Apple Inc.</b> Position: Research Intern Manager: Dr. Gierad Laput Team: Machine Intelligence Neural Design (part of AI/ML)	Pittsburgh, PA
<b>From 05/20 to 08/20</b>	<b>X, The Moonshot Factory (formerly Google X)</b> Position: AI Resident Manager: Pramod Gupta Team: Part of an early stage team working on a health tech moonshot (confidential project) in X <ul style="list-style-type: none"><li>Worked on applying various ML/DL techniques (e.g. variational autoencoders, CNN, RNN, attention mechanism, sensor fusion) to identify health biomarkers in multimodal continuous sensor data from the AURORA study</li><li>Multimodal representation learning of longitudinal wearable and user survey time-series data for the detection/prediction of health states</li><li>Investigated Attention-based Multimodal Multi-task Learning for predicting a user's health</li><li>Our research was featured in a company-wide newsletter</li><li>Submitted patents and co-authored a paper</li><li>Received a spot bonus and a peer bonus for my work</li></ul>	Mountain View, CA
<b>From 05/19 to 08/19</b>	<b>Intel Corporation</b> Position: Graduate Technical Intern for Machine Learning Manager: Tong Zhang Team: Network Platform Group within the Data Center Group <ul style="list-style-type: none"><li>Worked on closed-loop network automation for improved network efficiency using deep reinforcement learning</li><li>Investigated telemetry feature selection</li><li>Received Recognition Award</li><li>Contributed to a documentation and white paper</li></ul>	Santa Clara, CA

<b>From 08/17 to 08/23</b>	<b>Human Signals Lab, University of Texas at Austin</b> Position: Graduate Research Assistant Supervisor: Dr. Edison Thomaz Research: Human-centered AI, human behavior perception <ul style="list-style-type: none"> <li>• Developing adaptive and continual learning algorithms for sensor-based data streams</li> <li>• Exploiting environmental acoustic sounds for recognizing activities of daily living using voice assistants</li> <li>• Investigating multimodal deep learning for real-time human activity recognition using wearable sensor data</li> <li>• Applying various ML/DL techniques (e.g.: CNN, RNN, transfer learning, sensor fusion) on longitudinal time series sensor data</li> <li>• Organizing and conducting controlled and in-the-wild user studies for behavioral data collection</li> </ul>	Austin, TX
<b>From 06/16 to 08/16</b>	<b>E. L. Ginzton Laboratory, Stanford University</b> Position: Visiting Student Researcher-Intern (VSRi) Supervisor: Dr. Butrus Khuri-Yakub Research: Transcranial High Intensity Focused Ultrasound <ul style="list-style-type: none"> <li>• One-dimensional, two-dimensional, and three-dimensional modeling of the brain using Comsol</li> <li>• Modeling of piezoelectric wedge transducers using Comsol</li> <li>• Study of lamb wave propagation in the skull bone and the ultrasound focusing in the brain</li> <li>• Study of effect of skull bone characteristics on lamb wave propagation</li> <li>• Dispersion curve analysis of lamb waves in skull bone</li> <li>• Modeling of ultrasound focusing using laser beams</li> </ul>	Stanford, CA
<b>From 09/14 to 12/16</b>	<b>American University of Beirut</b> Position Held: Undergraduate Research Assistant Supervisor: Dr. Zaher Dawy Research: Seizure Prediction and Detection Optimization <ul style="list-style-type: none"> <li>• Cross-correlation analysis of EEG channels for optimizing epileptic seizure detection</li> <li>• Applied ML techniques on EEG data for epileptic seizure detection/prediction</li> </ul>	Beirut Lebanon
<b>From 12/14 to 01/15</b>	<b>Hospital Notre Dame Du Liban</b> Position Held: Trainee – Biomedical Department <ul style="list-style-type: none"> <li>• Assisted in the repairing and maintenance of the medical equipment</li> <li>• Gained knowledge of the different medical equipment</li> </ul>	Jounieh, Lebanon
<b>From 06/12 to 07/12</b>	<b>Harvard University</b> Program: People to People Leadership Summit <ul style="list-style-type: none"> <li>• Improved leadership skills</li> <li>• Attended leadership workshops</li> </ul>	Cambridge, MA

**PUBLICATIONS (J: Journal C: Conference W: Workshop P: Preprint)**

- P2 Advancing Location-Invariant and Device-Agnostic Motion Activity Recognition on Wearable Devices**  
*Rebecca Adaimi*, Abdelkareem Bedri, Jun Gong, Richard Kang, Joanna Arreaza-Taylor, Gerri-Michelle Pascual, Michael Ralph, Gierad Laput, ArXiv 2024 (released paper + dataset in [MLR Apple](#))
- C3 AudioIMU: Enhancing Inertial Sensing-Based Activity Recognition with Acoustic Models**  
 Dawei Liang, Guihong Li, *Rebecca Adaimi*, Radu Marculescu, Edison Thomaz, The 2022 International Symposium on Wearable Computers (ISWC '22) **\*\*Best Paper Honorable Mention Award**
- P1 Automated detection of foreground speech with wearable sensing in everyday home environments: A transfer learning approach**  
 Dawei Liang, Zifan Xu, Yinuo Chen, *Rebecca Adaimi*, David Harwath, Edison Thomaz, ArXiv 2022
- J4 Lifelong Adaptive Machine Learning for Sensor-based Human Activity Recognition Using Prototypical Networks**  
*Rebecca Adaimi* and Edison Thomaz, *Sensors*. 2022
- J3 Leveraging Sound and Wrist Motion to Detect Activities of Daily Living with Commodity Smartwatches**  
 Sarnab Bhattacharya\*, *Rebecca Adaimi*\*, Edison Thomaz, Proceedings of the ACM Interactive Mobile Wearable Ubiquitous Technologies (IMWUT) 2022 (\*equal contribution)
- J2 Ok Google, What Am I Doing? Acoustic Activity Recognition Bounded by Conversational Assistant Interactions**  
*Rebecca Adaimi*, Howard Yong, Edison Thomaz, Proceedings of the ACM Interactive Mobile Wearable Ubiquitous Technologies (IMWUT) 2021
- W2 Using Convolutional Variational Autoencoders to Predict Post-Trauma Health Outcomes from Actigraphy Data**  
 Ayse S. Cakmak, Nina Thigpen, Garrett Honke, Erick Perez Alday, Ali Bahrami Rad, *Rebecca Adaimi*, Chia Jung Chang, Qiao Li, Pramod Gupta, Thomas Neylan, Samuel A. McLean, Gari D. Clifford, Proceedings of the Machine Learning for Mobile Health NeurIPS Workshop 2020
- W1 Usability of a Hands-Free Voice Input Interface for Ecological Momentary Assessment**  
*Rebecca Adaimi*, Ka Tai Ho, Edison Thomaz, IEEE International Conference on Pervasive Computing and Communications Workshops (PerCom Workshops) 2020

## **C2 Eating Episode Detection with Jawbone-Mounted Inertial Sensing**

Keum San Chun, Hyoyoung Jeong, *Rebecca Adaimi*, Edison Thomaz, 42nd Annual International Conference of the IEEE Engineering in Medicine & Biology Society (EMBC) 2020

## **J1 Leveraging Active Learning and Conditional Mutual Information to Minimize Data Annotation in Human Activity Recognition**

*Rebecca Adaimi* and Edison Thomaz, Proceedings of the ACM Interactive Mobile Wearable Ubiquitous Technologies (IMWUT) 2019

## **C1 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, Proceedings of the 24th International Conference on Intelligent User Interfaces (IUI) 2019

## **SELECTED PROJECTS**

---

- Computer Vision Project: PhotoLocate: Self-Supervised Camera Localization Inside Panorama with Convolutional Neural Networks
- Reinforcement Learning Project: Devising an optimal interruption policy that minimizes user interruptibility using adaptive RL
- Convex Optimization Project: Towards Understanding Regularization in Normalization Layers in Deep Neural Networks
- Mobile Computing Project: Locality Dependent Gesture-based Smart Home Control System Using Bluetooth Technology
- Data Science Project: Predicting Soccer matches
- Final Year Project: A Drone Vision System for Security Surveillance with an Accelerated Design for Deep Learning Face Recognition (In collaboration with Intel)
- Intro to ECE Project: Designing and implementing a gaming console using LabView
- Data Structures and Algorithms Project: Designing databases for a new computer store along with the customer's and manager's user interfaces using C++ programming language

## **ADVISING AND MENTORING**

---

- Howard Yong (undergraduate)
- Jake Leverett (undergraduate)

## **TEACHING**

---

- **Teaching Assistant – Fall 2020, UT Austin**  
EE 382V: Activity Sensing and Recognition

## **SERVICE**

---

### **PROGRAM COMMITTEE:**

- FAccT 2023

### **STUDENT VOLUNTEER:**

- UIST (Program Committee) 2022
- UbiComp 2021
- UbiComp 2020
- PerCom 2020

### **REVIEWER:**

- Proceedings of the ACM Interactive Mobile Wearable Ubiquitous Technologies (IMWUT)
- IEEE Engineering in Medicine & Biology Society (EMBC)
- Neural Processing Letters

### **AMBASSADOR:**

- IEEEExtreme 15.0

## **AWARDS**

---

- **Alton R. and Doris A. Hagedorn Endowed Graduate Fellowship in Engineering, UT Austin – 2022-2023**
- **Agnes T. and Charles F. Wiebusch Fellowship, Cockrell School of Engineering, UT Austin – 2021-2022**
- **Dean's Honor (High Distinction), AUB – 2013-2017**

## **CERTIFICATES**

---

- **NVIDIA DLI Certificate - Fundamentals of Deep Learning for Computer Vision**, NVIDIA Deep Learning Institute, 2019  
Credential ID: 41fdd703b40a43b48da73305b9538345  
Credential URL: <https://courses.nvidia.com/certificates/41fdd703b40a43b48da73305b9538345>

## **SUMMARY SKILLS**

---

**COMPUTER SKILLS:** Experienced in Python (Pytorch, Keras, Tensorflow, Scikit-learn), Java, Matlab; Worked and have some knowledge in Android Development, C++, LabView

**LANGUAGES:** English (fluent), Arabic (fluent) and French (proficient)

**RESEARCH SKILLS:** Algorithm, Signal Processing, Statistical Analysis, Machine Learning, Deep Learning, Representation Learning

## **EXTRACURRICULAR ACTIVITIES**

---

### **GRADUATE UNIVERSITY ACTIVITIES (UT AUSTIN):**

- Treasurer of Electrical Longhorn Ladies in Engineering Organization (ELLE) (Mar. 2020-Present)

### **UNDERGRADUATE UNIVERSITY ACTIVITIES (AUB):**

- Treasurer of Women in Engineering (WIE) of IEEE AUB Student Branch (Sept. 2014-May 2017)
- Treasurer of AUB-Biomedical Engineering Society (AUB-BMES) (Sept. 2015-May 2016)
- President of AUB-Biomedical Engineering Society (AUB-BMES) (Sept. 2016-May 2017)