



Jennifer Adorno

PhD Candidate of Computer Science
Location-Aware Information Systems Lab
University of South Florida

CONTACT

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ABOUT ME

Jennifer Adorno is a PhD Candidate of Computer Science & Engineering at the University of South Florida. Her research areas of interest include: Ubiquitous Sensing & Human-Computer Interaction with a focus on Accessibility & Health. Over the summers, she serves as a mentor at the Research Experience for Undergraduates program hosted on her home institution.

EDUCATION

- | | |
|--|------|
| PhD in Computer Science and Engineering | 2023 |
| University of South Florida, Tampa, FL | |
| Dissertation: TITLE PENDING | |
| Committee: Jay Ligatti, Sean Barbeau, Paul Rosen, Tempestt Neal, Yueng DeLaHoz Isaza | |
| MS in Computer Science | 2017 |
| University of South Florida, Tampa, FL | |
| BS in Computer Science | 2016 |
| Universidad de Puerto Rico, Bayamon, PR | |
| Capstone: Lightning Detection Network Monitoring | |
| Advisors: Marc Legault, Carmelo Miranda, Lillian Bras Cummings | |

RESEARCH

My main research interest lie along the areas of accessibility, human-computer interaction, ubiquitous sensing and pervasive computing. I'm looking to tackle accessibility issues for visually impaired populations through computer science from the lens of ubiquitous sensing. As we continue interlacing technology into everyday items, we have the opportunity to make environments and tools more accessible for underserved populations. I'm also interested in the intersection between health and computer science, general human-computer interaction and computer science education.

Below are my active areas of research.

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| Improving Bus Arrival Estimates (Dissertation) | 08/2017 – current |
| University of South Florida & Center for Urban Transportation Research | |

- This project focuses on creating a machine learning experimentation platform used to compare state-of-the-art algorithms across transit agencies.
- Our approach has several strengths over the standard machine learning pipeline such as unattended real-time data collection over several cities, raw-data archiving and high-speed access to unstructured data structures. These improvements allow us to focus our attention on improving estimates by refining the feature extraction process in addition to parameter tuning for algorithms.

Reducing Patient Readmissions in Heart Failure Patients

05/2017 – current

University of South Florida (College of Engineering & College of Nursing)

- This project aims to reduce patient readmissions and health risks after a cardiovascular event. This is done through a mobile app in which doctors, nurses and family members can monitor a patient's health using wearables or assessments and providing interventions if needed. Patients can also utilize specialized health failure modules as self-care tools to improve their recovery and habits
- Our research focuses on identifying and applying novel intervention strategies in order to evaluate their efficacy.

PEER-REVIEWED PUBLICATIONS

Ghulam Jilani Quadri, **Jennifer Adorno**, Brenton M. Wiernik, Paul Rosen: "Automatic Scatterplot Design Optimization for Clustering Identification". IEEE Transactions on Visualization and Computer Graphics, 2022

Minh Pham, Hung Nguyen, Long Dang, **Jennifer Adorno**, "Compressive Features in Offline Reinforcement Learning for Recommender Systems". 2021 IEEE International Conference on Big Data (Big Data), Orlando, FL, USA, 2021

Jennifer Adorno, Brian Torres Alvarado, Sean J. Barbeau, and Miguel Labrador, "Evaluating Models for Estimating Schedule Deviation in Public Transit". 2021 IEEE International Conference on Pervasive Computing and Communication Workshops (PerCom Workshops).

Laureen Mack, Ponrathi Athilingam, **Jennifer Adorno**, "Health Literacy Impacts Knowledge and the Use of Education App in Heart Failure: A Pilot Study". Cardiology & Vascular Research, 2021

Jennifer Adorno, Minh Pham, Sean J. Barbeau, Miguel A. Labrador, Robert L. Bertini, "Scalable Real-Time Transit Data Archiving: A Framework for Performance Assessment and Machine Learning Prediction", Transportation Research Board Annual Meeting, Washington DC, January 2019.

Jennifer Adorno, Yueng DeLaHoz, and Miguel A. Labrador. "Smartphone-based floor detection in unstructured and structured environments." 2016 IEEE International Conference on Pervasive Computing and Communication Workshops (PerCom Workshops).

ARCHIVED PUBLICATIONS

Carlos Alvarado, Ghulam Jilani Quadri, **Jennifer Adorno**, Paul Rosen, "A Case-Study on Variations Observed in Accelerometers Across Devices". CoRR abs/2207.03350, 2022

Sean J. Barbeau, Minh Pham, **Jennifer Adorno**, Robert L. Bertini, "Improving Transportation Performance Measurement via Open Big Data Systems – Phase 1 Transit". Center for Transportation, Equity, Decisions and Dollars (CTEDD), 2020

Steven Diaz Hernandez, **Jennifer Adorno**, Mark Di Sano, "Stroke Classification of Tennis Players", 2016

PRIOR RESEARCH

Cluster Perception and Identification in Scatterplots 01/2020 – 12/2022
University of South Florida (Location-Aware Information Systems Lab & Graphics and Visualization Lab)

- This work focused on understanding the visual perception of clusters by observers across several sampling methods, visual encoding methods and datasets. The results were then generalized and used to determine the optimal encoding parameters for a given dataset.

Pulmonary Disease Audio Classification 01/2019 – 08/2019
University of South Florida (Location-Aware Information Systems Lab)

- Applied research directed towards capturing and classifying pulmonary sounds to diagnose chronic obstructive pulmonary disease (COPD) and Heart Failure (HF) using mobile phones.

Tennis Stroke Classification 05/2016 – 05/2017
University of South Florida (Location-Aware Information Systems Lab)

- The project was focused on performing activity recognition in the sport of tennis using Inertial Measurement Units (IMU). Secondary objectives included determining the optimal position to wear IMUs while playing the sport and creating graphical labeling software for accelerometer and gyroscope data. We achieved a 95% classification accuracy between 7 types of segmented tennis strokes.

Autonomous Robot Navigation 08/2015 – 12/2015
University of Puerto Rico (Computer Science Dpt. & Electrical Engineering Dpt.)

- Early stages of a project aiming to develop a self navigating robot that would perform collision avoidance using a stereoscopic camera. My relation to the project extended to generating depth maps and estimating the distance of regions in the robot's field of view.

Floor Detection on Unstructured Environments 05/2015 – 07/2015

University of South Florida (Location-Aware Information Systems Lab)

- This project was meant to serve as a module of a larger fall prevention system for visually impaired and elderly people. It focused on determining the ground in images retrieved from the camera of a mobile phone using computer vision techniques in real-time.

Lightning Detection and Monitoring System (PRLDN)

12/2014 - 12/2015

University of Puerto Rico & NASA Puerto Rico Space Grant Consortium

- The purpose of this project was to develop a lightning detection system using an array of sensors placed around the island of Puerto Rico, which is able to detect low frequency radio signals generated by lightning. My contribution to the project extended to expanding functionality of lightning monitoring modules, improving cross-platform support and introducing procedures for analysis of archived lightning data.

TEACHING

COP 4656: Software Development for Mobile Devices (asynchronous)
University of South Florida | Computer Science and Engineering

Spring 2021

COP 4656: Software Development for Mobile Devices (hybrid)
University of South Florida | Computer Science and Engineering

Spring 2020

Introduction to Machine Learning (REU Workshop)
University of South Florida | Computer Science and Engineering

Summer 2019

SERVICE/VOLUNTEERING

REU Mentor/Assistant (Summers Only)

05/2016 - 08/2019

University of South Florida

Roles: mentored students, coordinated events, held workshops, handled undergraduate application, managed day-to-day operations

Technology Officer

05/2011 - current

Fundación Retinitis Pigmentosa de Puerto Rico

Services: email services, web services, administrative duties

MENTORING

Undergraduates: Vicky Zheng, Hailey Baez, Karla Marie Montañez, Xingyuan Li, Brian Torres, Zuleyka Gonzalez, Carlos Alvarado, Jenny Sánchez (Supervised), Osniel Quintana (Supervised), Kin Ng Lugo (Supervised)

WORK EXPERIENCE

Graduate Assistant

05/2020 - current

University of South Florida

Services: linux server administration, virtual desktop infrastructure engineering, virtualization services, devops services, cctv services, vpn services, full stack software development, IT helpdesk

Teaching Assistant

01/2016 - 05/2020

University of South Florida

Courses: Introduction to Artificial Intelligence (graduate & undergraduate), Introduction to Hadoop and Big Data, Software Development for Mobile Devices, Advanced Program Design, Computer Networks 1, Software Engineering, Introduction to Discrete Structures, Operating Systems for IT, Ethics for IT, Web Design for IT

System Administrator

05/2011 - current

Farmacia Giusti Inc.

Services: linux server administration, network administration (layer 2), virtualization services, cctv services, multi-site vpn services, email services, web services, purchasing, IT helpdesk

AWARDS

- IEEE VIS Inclusivity & Diversity Travel Scholarship (2022)
- Great Minds in STEM Scholarship (Intel 2019)
- Florida Georgia Louis Stokes for Alliance Minority Participation (FGLSAMP) Bridge to Doctorate Scholarship (2018)
- Alfred P. Sloan Foundation Minority Ph.D. Scholarship (2016)
- Dean's List Recognition (2015)

CERTIFICATES/WORKSHOPS

- TeachAccess Study Away Part 1 (2023)
- Safe Zone Allyship Training (2021)
- HIPAA Privacy at USF Health (2020)
- Biomedical Investigators and Key Personnel (2017)
- Responsible Conduct of Research for Engineers (2016)

CONFERENCES ATTENDED

- Institute on Teaching and Mentoring (2022)
- ACM Tapia Celebration of Diversity in Computing (AccessComputing 2022)
- CRA-WP Grad Cohort Workshop for Women (2022)
- Institute on Teaching and Mentoring (2021)
- CMD-IT Academic Careers Workshop (2021)
- CRA-WP Grad Cohort Workshop for Inclusion, Diversity, Equity, Accessibility, and Leadership Skills (2021)
- IEEE International Conference on Pervasive Computing and Communication (PerCom 2021)

- Institute on Teaching and Mentoring (2020)
- Grace Hopper Celebration (2020)
- CRA-WP Grad Cohort Workshop for Inclusion, Diversity, Equity, Accessibility, and Leadership Skills (2020)
- ACM Tapia Celebration of Diversity in Computing (Two Sigma 2019)
- ACM Tapia Celebration of Diversity in Computing (IBM 2018)
- Institute on Teaching and Mentoring (2016)