

# Gabriella Johnson

HCI, Accessibility Researcher

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**Research Interests:** Human Computer Interaction, Accessibility, Child Computer Interaction, Assistive Robotics

## RESEARCH EXPERIENCE

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Graduate Research Assistant  
University of Colorado Boulder

August 2018 – present  
Advisor: Shaun Kane

- Game Changer: Accessible Audio and Tactile Guidance for Board and Card Games
  - Used ArUco markers to track location of game pieces and information on cards
  - Used Computer Vision techniques to detect and track board
  - Created a set of guidelines for accessible board games
  - Evaluated with blind participants
  - Developed a system to empower blind players to be independent players during gameplay
- LabelGen: Automating Braille Label Generation for Card Games
  - Used machine learning techniques to translate symbols into text
  - Developed a mobile application to automatically generate labels for card games

Research Experience for Undergraduates Participant  
University of South Florida & Universidad de Oviedo

May 2017 – July 2017  
Advisor: Miguel Labrador

- Water Detection in Single Daytime Images for Fall Prevention Systems
  - Worked with a student from the Universidad de Oviedo in Oviedo, Spain
  - Used neural networks to train system to detect water in images; model to be used for fall prevention systems
  - Project was a component of a Ph.D. student's dissertation

Department of Homeland Security Scholar  
University of Texas at San Antonio

August 2016 – December 2017  
Advisor: Palden Lama

- Analysis and Training in Defense of Biological and Digital Threats
  - Used machine learning techniques to classify digital threats
  - Created guidelines for a digital threat metric system emulating the biological threat system

## PROFESSIONAL EXPERIENCE

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IT Developer I  
Steves & Sons, San Antonio, Texas

May 2016 – August 2016

- Technical Assistant on data entry project
- Constructed data analysis reports using SQL queries
- Constructed C# classes to be included in door classification projects

Intern  
BIF Technologies, San Antonio, Texas

June 2015 – May 2016

- Shadowed CEO of company
- Collaborated on several Java projects
- Wrote Software Requirements Specifications for projects

## PUBLICATIONS

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**Gabriella Johnson** & Shaun K. Kane.

*Game Changer: Accessible Audio and Tactile Guidance for Board and Card Games*. Proceedings of ISS 2019 Daejeon, South Korea. In Review.

**Gabriella Johnson.** *Eye in the Sky: An Audio Description System for Board Games.* Computer Research Association URMD Grad Cohort Workshop. Waikoloa Village, Hawaii. Poster.

## OTHER PROJECTS

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Rainie the Reading Robot: Smart Reading Robot for Storytime

- Robot that aids children during storytime by reading words they do not know
- Used computer vision techniques to capture and read desired word
- Evaluated system with Wizard of Oz Prototype to study interactions

A Playful Approach to A Difficult Topic: Using Board Games to Teach Families About Digital Privacy

- Created a board game to teach children and families about the dangers of digital privacy
- Included accessibility features to make more inclusive

## EDUCATION

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University of Colorado Boulder  
Ph.D. in Computer Science

August 2018 – present

University of Texas at San Antonio  
B.S. in Computer Science, Minor in Mathematics

August 2015 – December 2017  
Summa Cum Laude

## HONORS, AWARDS

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- Grace Hopper Celebration Scholar, 2019
- GEM Associate Fellow, 2019
- CRA Women Grad Cohort Travel Grant, 2019
- CRA Underrepresented Minorities and Persons with Disabilities Grad Cohort Travel Grant, 2019
- Dean's Summer Research Fellowship, 2018
- Department of Homeland Security Scholar, 2016 – 2017

## ACTIVITIES, SERVICE

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- ACM CHI Student Volunteer, 2019
- ACM-W Public Relations Officer, 2017
- NCAA Division One Athlete, University of Texas at San Antonio, 2015

## PROFESSIONAL DEVELOPMENT

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- Grace Hopper Celebration, October 2019
- Computing Research Association Women Workshop, April 2019
- Computing Research Association URMD Workshop, March 2019