Haley Adams

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Research Interests

Perception | Virtual & Augmented Reality | Human-Computer Interaction | Visualization

Education

PhD in Computer Science
Vanderbilt University | Nashville, TN, USA — 2016 - present
Advisor: Bobby Bodenheimer

BSc in Computer Science
Rhodes College | Memphis, TN, USA — 2011 - 2015
Advisor: Betsy Williams Sanders

Exchange Student in Information and Communication Technology
Griffith University | Southport, QLD, Australia — 2014

Research Experience

Research Assistant — Vanderbilt University
Department of Electrical Engineering and Computer Science — 2018 - present
- Project 1: Assessed what visual properties of holograms affect distance perception and action affordances in the Microsoft HoloLens
- Project 2: Developed a deep learning walking-in-place system for infinite locomotion in VR

Graduate Researcher — Vanderbilt University
Department of Electrical Engineering and Computer Science — 2016 - 2018
- Project 1: Revealed behavioural differences in children's motor recalibration after VR exposure
- Project 2: Simulated vision impairments from patient data using a head-mounted display
- Project 3: Designed an interface for visualization of ear anatomy in medical training

Undergraduate Research Assistant — Rhodes College
Department of Math and Computer Science — 2015 - 2016
- Integrated Oculus Rift DK2 and WorldViz PPT Tracking System to create collaborative experience
- Evaluated how virtual reality affects collaboration when users are unable to meet their collaborators in person prior

Undergraduate Research Assistant — University of Minnesota
Department of Computer Science — 2013
- Conducted preliminary work on a VR application for neurocognitive assessment

Publications

Journal & Conference Proceedings

Hansen Wu, **Haley Adams**, Grant Pointon, Sarah Creem-Regehr, Jeanine Stefanucci, and Bobby Bodenheimer. "Danger from the Deep: A Gap Affordance Study in Augmented Reality". *IEEE VR Workshop on Perceptual and Cognitive Issues in AR (PERCAR). 2019.* [Accepted]

Carlos Salas-Rosales, Grant Pointon, **Haley Adams**, Sarah Creem-Regehr, Jeanine Stefanucci, and Bobby Bodenheimer. "Distance Judgments to On- and Off-Ground Objects in Augmented Reality ". *IEEE Virtual Reality. 2019.* [Accepted]

Sara Hanson, Richard A. Paris, **Haley Adams**, and Bobby Bodenheimer. "Improving Walking in Place Methods with Individualization and Deep Networks". *IEEE Virtual Reality. 2019.* [Accepted]

Haley Adams, Justin Shinn, William G Morrel, Jack Noble, and Bobby Bodenheimer. "Development and evaluation of an immersive virtual reality system for medical imaging of the ear". *SPIE: Image-Guided Procedures, Robotic Interventions, and Modeling. 2019*

Noorin Asjad, **Haley Adams**, Richard Paris, and Bobby Bodenheimer. "Perception of Height in Virtual Reality — A Study of Climbing Stairs". *In Proceedings of the ACM Symposium on Applied Perception (SAP)*. 2018.

Haley Adams, Gayathri Narasimham, John Rieser, Sarah Creem-Regehr, Jeanine Stefanucci, and Bobby Bodenheimer. "Locomotive and Prism Recalibration of Children and Teens in Immersive Virtual Environments". *IEEE Transactions on Visualization and Computer Graphics (TVCG)*. 2018.

Haojie Wu, Daniel Ashmead, **Haley Adams**, and Bobby Bodenheimer. "3D Sound Rendering in a Virtual Environment to Evaluate Pedestrian Street Crossing Decisions at a Roundabout". *IEEE VR Workshop on Sonic Interactions for Virtual Environments (SIVE)*. 2018.

Haojie Wu, Daniel Ashmead, **Haley Adams**, and Bobby Bodenheimer. "Using Virtual Reality to Assess the Street Crossing Behavior of Pedestrians With Simulated Macular Degeneration at a Roundabout". *In Frontiers in Virtual Environments*. 2018.

Hannah Chipman, **Haley Adams**, Betsy Williams Sanders, D Brian Larkins "Evaluating Computer Science Camp Topics in Increasing Girls' Confidence in Computer Science". *Journal of Computing Sciences in Colleges*. 2018.

Erin Mindell Cannon, Priya Chawla, Katherine Lo, and **Haley Adams**. "igniteCS: Addressing Undergraduate CS Retention". *In Proceedings of the 47th ACM Technical Symposium on Computing Science Education (SIGCSE)*. 2016.

Presentations

Gayathri Narasimham, **Haley Adams**, John Rieser, Sarah Creem-Regehr, Jeanine Stefanucci, and Bobby Bodenheimer. "Spatial Memory of Children and Teens in Immersive Virtual Environments". *In Proceedings of the ACM Symposium on Applied Perception (SAP)*. 2018.

Alex Ayris, Richard Paris, and **Haley Adams**. "STEManism: Current and Future Horizons of Interdisciplinary Collaboration between the Humanities, Digital Humanities, and STEM". *In Proceedings of Humanities, Arts, Science, and Technology Alliance and Collaboratory (HASTAC)*. 2017.

Haley Adams, Chelsey Thompson, David Thomas, Farah Sharis, Catherine Grace Jernigan, Corrie Moore, and Betsy Williams. "The Effect of Interpersonal Familiarity on Cooperation in a Virtual Environment". *In Proceedings of the ACM Symposium on Applied Perception (SAP)*. 2015.

Haley Adams, Alyssa Crider, and Victoria Interrante. "Virtual Reality Implementation for Neurocognitive Assessment". *In Proceedings of Grace Hopper Celebration of Women in Computing*. 2013.

Teaching & Mentorship Experience

Graduate Teaching Assistant — Vanderbilt University
Department of Electrical Engineering and Computer Science — 2016 - 2018

- Evaluated assessments and provided meaningful feedback to 50-100 student classes in short time frames for Discrete Structures and Algorithms (CS 2212)
- Guest lectured on inductive proofs to sophomore undergraduates for Discrete Structures and Algorithms (CS 2212)
- Guest lectured on 3D modeling for Virtual Reality for Interdisciplinary Applications (UNIV 3279)
- Guest lectured on Virtual Reality and Visualization for Introduction to Visualization (CS 5891)
- Served as Experienced TA Panelist at Teaching Assistant Orientation, 2017

Graduate Research Mentor — Vanderbilt University
School of Science and Math — 2016 - 2018
- Dictated project milestones and facilitated communication with research faculty
- Guided development of fundamental research and software development skills in C# of high schoolers

Students Mentored

Taylor Nye Smith · High school student in School for Science and Math	2016 - 2017
Noorin Asjad · Undergraduate in Vanderbilt University	2017 - 2018
Peter Cho · Undergraduate in Vanderbilt University	2018 - 2019
Nidhi Mehta · Undergraduate in Vanderbilt University	2018 - 2019
Priya Rajan · Undergraduate in Vanderbilt University	2018 - 2019
Carlos Salas · High school student in School for Science and Math	2018 - 2019
Hansen Wu · Undergraduate in Vanderbilt University	2018 - 2019

Leadership & Service

Founding Member and Officer
ACM-W Student Chapters — 2013 - 2018
- Managed resources and mediated between students, faculty, and the ACM-W
- Provided opportunities for advancement and organized events with diverse speakers and recruiters

Event Organizer
Emerge - Emerging Technology Symposium — 2017
- Handled event logistics for half-day symposium, including food, advertisement, and audio/video
- Recruited and arranged accommodation for keynote speakers

Director, Instructor
Camp Codette — 2015 - 2016
- Founded a persisting summer coding program for middle and high school girls
- Formulated curriculum, led team of undergraduate counselors, and instructed learning sessions
- Provided insights to Google Education and conferred pedagogical strategies for student retention in computer science

Unity Development Workshop Leader
Vandy Hacks — 2018

Student Volunteer
IEEE VR — 2017 - 2018

Technical Skills

Programming Languages | C# · Python · Matlab · Latex · C++ · OpenGL · HTML5 · CSS

3D and 2D Design | Unity Game Engine · Photoshop · Blender

Honors & Awards

Academic Merit Scholarship, **Vanderbilt University**	2016 - present
Vanderbilt IBM Fellowship, **Alumni Association**	2016 - present
Presidential Scholarship, **Rhodes College**	2011 - 2015
Best Poster, **ACM Symposium on Applied Perception (SAP)**	2015