

Haley Adams

Enthusiastic researcher, diligent developer, and strong interdisciplinary collaborator
Special expertise with virtual & augmented reality (VR|AR), experimental design, perceptual psychology, and accessibility

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Education

- PhD in Computer Science | Vanderbilt University** Expected 2022
- Thesis - Designing Mixed Reality to Improve Spatial Perception and Accessibility
 - Microsoft Research Dissertation Grant Recipient
 - Advisor: Bobby Bodenheimer
- BSc in Computer Science | Rhodes College** 2011 - 2015
- Advisor: Betsy Williams Sanders

Honors & Awards

- Microsoft Research Dissertation Grant** | Microsoft 2021 - present
- Academic Merit Scholarship** | Vanderbilt University 2016 - present
- Vanderbilt IBM Fellowship** | Alumni Association 2016 - 2020
- Google Education igniteCS Award** | Google 2015, 2016
- Best Research Poster** | ACM Symposium on Applied Perception (SAP) 2015
- DREU Award Recipient** | Computer Research Association 2013
- Presidential Scholarship** | Rhodes College 2011 - 2015

Professional Experience

- Graduate Research Assistant** Vanderbilt University
Department of Computer Science 2016 - present
- Project 1: Isolated properties of AR displays that distort depth perception
 - Project 2: Developed an eye-tracked MR vision simulation to assist accessibility evaluations for real and virtual products
 - Project 3: Developed a machine learning walking-in-place system for infinite locomotion in VR
 - Project 4: Designed an interface for visualization of ear anatomy in medical training
 - Project 5: Revealed behavioural differences in children's motor recalibration after VR exposure
- Magic Lab Intern** Sony Interactive Entertainment
PlayStation Research & Development 2019
- Conducted preliminary data collection and cleaning for reinforcement learning project
- 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
- Director, Instructor** Google, Rhodes College
Camp Codette 2015 - 2016
- Founded a persisting summer coding program for middle and high school girls in Memphis, TN
 - Formulated curriculum, led teams of undergraduate counselors, and instructed learning sessions
 - Provided insights to Google Education and conferred pedagogical strategies for retention in CS
- Front End Web Developer** Rhodes College
Crossroads to Freedom Digital Archive 2013 - 2015
- Designed conceptual wireframes and coded front-end interfaces for archive app and website
 - Incorporated feedback from development team. Instructed team in new HTML and CSS frameworks
- Undergraduate Research Assistant** University of Minnesota
Department of Computer Science 2013
- Awarded position through CRA Distributed Research Experience for Undergraduates (DREU) program
 - Advised by Victoria Interrante. Conducted research on the use of VR for neurocognitive assessment

Technical Skills

Programming Languages

C# · Python · R · Latex · HTML · CSS · C++ · OpenGL

3D and 2D Design

Unity Game Engine · Photoshop · Blender

Publications

Journal & Conference Proceedings

- **Haley Adams**, Jeanine Stefanucci, Sarah Creem-Regehr, and Bobby Bodenheimer. [Depth Perception in Augmented Reality: The Effects of Display, Shadow, and Position](#). *IEEE Virtual Reality (VR)*. 2022.
- **Haley Adams**, Holly Gagnon, Jeanine Stefanucci, Sarah Creem-Regehr, and Bobby Bodenheimer. [Stay in Touch! Shape and Shadow Influence Surface Contact in XR Displays](#). *IEEE Transactions on Visualization and Computer Graphics (TVCG)*. 2021. [In Preparation]
- **Haley Adams**, Jeanine Stefanucci, Sarah Creem-Regehr, Grant Pointon, William Thompson, and Bobby Bodenheimer. [Shedding Light on Cast Shadows: An Investigation of Perceived Ground Contact in AR and VR](#). *IEEE Transactions on Visualization and Computer Graphics (TVCG)*. 2021.
- **Haley Adams**. [Resolving Cue Conflicts in Augmented Reality](#). *IEEE Virtual Reality Abstracts and Workshops*. 2020.
- Gayathri Narasimham, **Haley Adams**, John Rieser, and Bobby Bodenheimer. [Encoding Height: Egocentric Spatial Memory of Adults and Teens in a Virtual Stairwell](#). *Symposium on Applied Perception*. 2020.
- 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.
- 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.
- Sara Hanson, Richard A. Paris, **Haley Adams**, and Bobby Bodenheimer. [Improving Walking in Place Methods with Individualization and Deep Networks](#). *IEEE Virtual Reality*. 2019.
- **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.
- 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

- **Haley Adams**. [Depth perception and stylized graphics in AR HMDs](#). *IEEE ISMAR Workshop on Perceptual and Cognitive Issues in AR (PERCxR)* 2022.
- **Haley Adams**. [A Strange View: Using Perception to Improve XR](#). *Hi5 Seminar Series, University of Mississippi*. 2020. https://www.youtube.com/watch?v=ZbPsKN4H_nw
- **Haley Adams**, Jack Noble, William G. Morrel, Alejandro Rivas, Justin Shinn, Robert Labadie, and Bobby Bodenheimer. [Play it by Ear: An Immersive Ear Anatomy Tutorial](#). *In Proceedings of IEEE VR*. 2019.
- 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 Department of Computer Science

Vanderbilt University
2016 - 2019

- Evaluated assessments and provided meaningful feedback to 50-100 student classes in short time frames for Discrete Structures and Algorithms (CS 2212)
- Provided supplemental instruction to students on computer graphics principles and OpenGL programming. Assessed OpenGL and C++ code for Computer Graphics (CS 5258)
- Guest lectured for Discrete Structures and Algorithms (CS 2212), Virtual Reality for Interdisciplinary Applications (UNIV 3279), Introduction to Visualization (CS 5891), & Augmented Virtual Reality (CS 8395)
- Served as Experienced TA Panelist at Teaching Assistant Orientation

Graduate Research Mentor Department of Computer Science

Vanderbilt University
2016 - 2022

- Guided development of fundamental research skills and software development skills in C#
- Dictated project milestones and facilitated communication with research faculty

Students Mentored

Jeong Eun (Elle) Choi	Undergrad · Vanderbilt University	2022
Sonya Jayathilake	High school · School for Science and Math	2022
Sreynit Khatt	Undergrad · Berea University	2022
Carlos Salas Rosales	High school · School for Science and Math	2018 - 2020
Grayson Hanson	Undergrad · University of Southern California	2018
Hansen Wu	Undergrad · Vanderbilt University	2018
Nidhi Mehta	Undergrad · Vanderbilt University	2018
Peter Cho	Undergrad · Vanderbilt University	2018
Priya Rajan	Undergrad · University of Cincinnati	2018
Noorin Asjad	Undergrad · Vanderbilt University	2017
Miti Joshi	Undergrad · Vanderbilt University	2016 - 2018
Taylor Nye Smith	High school · School for Science and Math	2016 - 2017

Leadership & Service

Peer Reviewer

- Journal - ACM TAP, IEEE TVCG, Frontiers in Virtual Reality, PLOS ONE
 - Conference - ACM UIST, IEEE ISMAR, IEEE VR, SIGCHI PLAY
- 2019-2022

Graduate Student Outreach Vanderbilt University School of Engineering

2019-2022

Student Volunteer Chair IEEE VR

2020

Founding Member and Officer ACM-W Student Chapters

2013 - 2018

- Managed resources and mediated communications between students, faculty, and the ACM-W
- Provided opportunities for student 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