

## Appointments

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### Assistant Professor

DEPARTMENT OF COMPUTER SCIENCE  
Emory University

Atlanta, GA

2021 -

### Postdoctoral Researcher

COMPUTER SCIENCE AND ENGINEERING  
Northwestern University

Evanston, IL

2020-2021

## Education

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### PhD in Computer Science

GEORGIA INSTITUTE OF TECHNOLOGY  
Advised by Dr. Alex Endert

Atlanta, GA

2020

### B.S. in Computer Science and Mathematics

UNIVERSITY OF GEORGIA  
*summa cum laude*

Athens, GA

2015

## Honors & Awards

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2019-2020 <b>GVU Foley Scholar</b> , Recipient, Georgia Institute of Technology	Atlanta, GA
2018-2019 <b>GVU Foley Scholar</b> , Finalist, Georgia Institute of Technology	Atlanta, GA
2019 <b>D.E. Shaw Exploration Fellowship</b> , Recipient	Atlanta, GA
2019 <b>Siemens FutureMaker Fellowship</b> , Recipient	Atlanta, GA
2017 <b>Graduate Student Symposium</b> , Participant, AT&T Labs	New York, NY
2017 <b>Doctoral Colloquium</b> , Participant, IEEE Vis	Phoenix, AZ
2017-2020 <b>Graduate Fellowship for STEM Diversity (GFSD)</b> , Recipient	Atlanta, GA
2017 <b>NSF Graduate Research Fellowship Program</b> , Honorable Mention	Atlanta, GA
2017 <b>Department of Defense SMART Fellowship</b> , Recipient (Declined)	Atlanta, GA
2015-2019 <b>President's Fellowship</b> , Recipient, Georgia Institute of Technology	Atlanta, GA
2015 <b>CURO Symposium Best Paper Award</b> , Recipient, University of Georgia	Athens, GA
2014 <b>CURO Research Assistantship</b> , Recipient, University of Georgia	Athens, GA
2014 <b>Hahn Family Scholarship for Computer Science</b> , Recipient, University of Georgia	Athens, GA
2013 <b>John G. Hollingsworth Award for Excellence in Mathematics</b> , Recipient, University of Georgia	Athens, GA
2012-2015 <b>Zell Miller Scholarship</b> , Recipient, University of Georgia	Athens, GA

## Publications

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### Journal Articles

- **E. Wall**, M. Agnihotri, L. Matzen, K. Divis, M. Haass, A. Endert, and J. Stasko, "A Heuristic Approach to Value-Driven Evaluation of Visualizations", *IEEE Transactions on Visualization and Computer Graphics (Proc. InfoVis'18)*, 2019. [journal, 25% papers accepted]
- **E. Wall**, S. Das, R. Chawla, B. Kalidindi, E. Brown, and A. Endert, "Podium: Ranking Data Using Mixed-Initiative Visual Analytics", *IEEE Transactions on Visualization and Computer Graphics (Proc. VAST'17)*, 2018. [journal, 30% papers accepted]
- B.C. Kwon, H. Kim, **E. Wall**, J. Choo, H. Park, and A. Endert, "AxiSketcher: Interactive Nonlinear Axis Mapping through User's Drawing on Visualization", *IEEE Transactions on Visualization and Computer Graphics (Proc. VAST'16)*, 2017. [journal, 21% papers accepted]

### Conference Proceedings

- **E. Wall**, J. Stasko, and A. Endert, "Toward a Design Space for Mitigating Cognitive Bias in Vis", *IEEE Information Visualization (VIS) Short Papers*, 2019. [conference-short, 32% papers accepted]
- **E. Wall**, A. Arcalgud, K. Gupta, and A. Jo, "A Markov Model of Users' Interactive Behavior in Scatterplots", *IEEE Information Visualization (VIS) Short Papers*, 2019. [conference-short, 32% papers accepted]

- **E. Wall**, L. Blaha, C. Paul, and A. Endert, “A Formative Study on Interactive Bias Metrics in Visual Analytics Using Anchoring Bias”, *Proceedings of the 17th IFIP TC 13 International Conference on Human-Computer Interaction (INTERACT’19)*, 2019. [conference, 29% papers accepted]
- **E. Wall**, S. Ghorashi, and G. Ramos, “Using Expert Patterns in Assisted Interactive Machine Learning: A Study in Machine Teaching”, *Proceedings of the 17th IFIP TC 13 International Conference on Human-Computer Interaction (INTERACT’19)*, 2019. [conference, 29% papers accepted]
- **E. Wall**, L. Blaha, L. Franklin, and A. Endert, “Warning, Bias May Occur: A Proposed Approach to Detecting Cognitive Bias in Interactive Visual Analytics”, *IEEE Visual Analytics Science and Technology (VAST)*, 2017. [conference, 33% papers accepted]
- S.K. Badam, Z. Zeng, **E. Wall**, A. Endert, and N. Elmqvist, “Supporting Team-First Visual Analytics through Group Activity Representations”, *Graphics Interface*, 2017. [conference, 50% papers accepted]

#### Refereed Workshop Papers

- **E. Wall**, L. Blaha, C. Paul, K. Cook, and A. Endert, “Four Perspectives on Human Bias in Visual Analytics”, *DECISive: Workshop on Dealing with Cognitive Biases in Visualizations (at InfoVis’17)*, 2017. [workshop]

#### Book Chapters

- **E. Wall**, L. Blaha, C. Paul, K. Cook, and A. Endert, “Four Perspectives on Human Bias in Visual Analytics”, *Cognitive Biases in Visualizations*, Ed. G. Ellis, Springer, 2018, Chapter 3, pp. 29-42. [book chapter]

#### Theses

- **E. Wall**, “Detecting and Mitigating Human Bias in Visual Analytics”, Georgia Tech, School of Interactive Computing Ph.D. Thesis, 2020.

## Professional Experience

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### Georgia Institute of Technology

Atlanta, GA

GRADUATE RESEARCH ASSISTANT

2015-2020

- Advised by Dr. Alex Endert.
- Detection and mitigation of human bias in visual analytic systems based on user interaction patterns.

### Microsoft Research

Seattle, WA

INTERN (MACHINE TEACHING GROUP)

Summer 2018

- Mentored by Gonzalo Ramos.
- Modeled how experts use machine teaching to train ML classifiers. Developed systematic guidelines to help novices train ML classifiers.

### Pacific Northwest National Laboratory

Richland, WA

INTERN (NATIONAL SECURITY INTERNSHIP PROGRAM, VISUAL ANALYTICS GROUP)

Summer 2016

- Mentored by Lyndsey Franklin and Kris Cook.
- Developed heuristic metrics for detecting a user’s bias in visual analytics systems based from interaction patterns.

### Jet Propulsion Laboratory

Pasadena, CA

INTERN (SPACE GRANT PROGRAM, SYSTEMS ENGINEERING GROUP)

2013-2015

- Mentored by Marc Sarrel.
- Automated and visualized the determination of data flow across ground system. Used SysML and principles of Model-Based Systems Engineering to model the ground system of Lockheed Martin’s Orion Capsule.

### University of Georgia

Athens, GA

RESEARCH ASSISTANT

Fall 2014

- Dr. Don Potter, Professor of Computer Science and director of the Institute for Artificial Intelligence.
- Used artificial neural networks to predict solar radiation in Georgia. Funded by the Georgia Power Advanced Solar Initiative.

### University of Georgia

Athens, GA

RESEARCH ASSISTANT

Fall 2013

- Dr. Liming Cai, Professor of Computer Science and Computational Biology and director of the RNA Informatics Lab.
- Used sequence alignment of RNA for detecting coevolution in species with a common ancestor.

- Dr. Prashant Doshi, Professor of Computer Science and director of the THINC Lab.
- Extended GaTAC (Georgia Testbed for Autonomous Control of vehicles) by creating simulation and programmable interface for quadcopters. Applications to autonomous decision-making in UAVs in multi-agent setting using Parrot A.R. Drone quadcopters.

## Presentations

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### Invited Talks

- **E. Wall**, As We Are: Detecting and Mitigating Human Bias in Visual Analytics. Presented at:
  - CMU & AFRL, Center of Excellence on Human-Machine Teaming, Virtual Brown Bag, May 2020.
  - Siemens, Virtual Brown Bag, May 2020.
  - University of Washington, Allen School Colloquium, Seattle, WA, February 2020.
  - Cornell University, Info Science Colloquium, Ithaca, NY, March 2020.
  - Emory University, Atlanta, GA, February 2020.
  - New York University, New York, NY, February 2020.
  - University of Wisconsin, Madison, WI, February 2020.
- **E. Wall**, Left, Right, and Gender: Mitigating Implicit Human Bias in Visual Analytics, *Georgia Tech GVV Brown Bag*, Atlanta, GA, January 2020. (viewable at <https://smartech.gatech.edu/handle/1853/62417>)
- **E. Wall** and A. Endert, The Interactive Analytics Library: Treating Interaction as Data, *Pacific Northwest National Laboratory*, Richland, WA, May 2017.

### Posters and Demonstrations

- **E. Wall**, Warning, Bias May Occur: Detecting and Mitigating Cognitive Bias in Visual Analytics, Demonstration. Presented at:
  - Georgia Tech GVV Demo Showcase, Atlanta, GA, October 2019.
  - Summer Institute on Bounded Rationality, Berlin, Germany, June 2019.
  - Georgia Tech GVV Demo Showcase, Atlanta, GA, April 2019.
- **E. Wall**, L. Blaha, and L. Franklin, and A. Endert, Warning, Bias May Occur: A Proposed Approach to Detecting Cognitive Bias in Interactive Visual Analytics, Demonstration. Presented at:
  - CRA-W Grad Cohort, San Francisco, CA, April 2018.
  - Georgia Tech GVV Demo Showcase, Atlanta, GA, April 2018.
  - Georgia Tech GVV Demo Showcase, Atlanta, GA, April 2017.
- **E. Wall**, S. Das, B. Kalidindi, R. Chawla, E. Brown, and A. Endert, *Podium: Ranking Data Using Mixed-Initiative Visual Analytics*, Poster and Demonstration. Presented at:
  - Georgia Tech GVV Demo Showcase, Atlanta, GA, April 2018.
  - Georgia Tech GVV Demo Showcase, Atlanta, GA, April 2017.
  - CRA-W Grad Cohort, San Diego, CA, April 2016.
  - Georgia Tech GVV Demo Showcase, Atlanta, GA, April 2016.

## Teaching

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### Guest Lectures

- *Introduction to Javascript*, Guest Lecture, Introduction to Information Visualization (CS 4460), Georgia Tech, Atlanta, GA, February 2019.
- *Cognition in Visualization*, Guest Lecture, Information Visualization (CS 7450), Georgia Tech, Atlanta, GA, December 2017.
- *Visual Analytics*, Guest Lecture, Information Visualization (CS 7450), Georgia Tech, Atlanta, GA, November 2017.
- *Visualization Design: Do's and Don'ts*, Guest Lecture, Introduction to Information Visualization (CS 4460), Georgia Tech, Atlanta, GA, June 2017.

### Teaching Assistant

- Introduction to Information Visualization (CS 4460), Georgia Tech, Atlanta, GA, Spring 2019. 133 students.
- Information Visualization (CS 7450), Georgia Tech, Atlanta, GA, Fall 2017. 74 students.
- Introduction to Computing and Programming (CSCI 1301), University of Georgia, Athens, GA, Fall 2012 and Fall 2013.

## Mentoring

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2020	<b>Jamal Paden</b> , B.S. Computer Science, Class of 2020, Usability testing for bias mitigation	Georgia Tech
2017-2018	<b>Yingxiao Ouyang</b> , M.S. HCI, Class of 2019, Usability testing and prototyping for bias mitigation	Georgia Tech
2017	<b>Qiaochu Mu</b> , M.S. HCI, Class of 2018, Usability testing and prototyping for bias mitigation	Georgia Tech
2016-2017	<b>Bharath Kalidindi</b> , B.S. Computer Science, Class of 2018, Ranking data based on user interaction	Georgia Tech

## Service

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- **Organizer.** Trust and Expertise in Visual Analytics (Trex) Workshop at IEEE VIS 2020.
- **Program Committee Member.** VIS Short Papers 2020. VISxAI Workshop at IEEE VIS 2019. CHI Late Breaking Work 2018.
- **Graduate Student Council Chair,** School of Interactive Computing. 2018-2020. Representative of graduate students in the School of Interactive Computing.
- **Reviewer.** EuroVis 2020. CHI 2020. VIS 2019. CHI 2019. International Journal of Human-Computer Studies 2019. TVCG 2018. VIS 2018. CHI 2018. KDD IDEA 2017. VIS 2017. VAST Challenge 2016.
- **Panelist.** Advancing Visualization Inclusion and Diversity (AVID) Workshop, *IEEE Vis*, Phoenix, AZ, October 2017.
- **Graduate Student Council Travel Committee.** 2017-2018. Responsible for awarding travel grants to graduate student applicants.

## Other Professional Activities

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- NextProf Nexus Workshop, *Atlanta, GA*, October 2019.
- Summer Institute on Bounded Rationality, *Berlin, Germany*, June 2019.
- CRA-W Grad Cohort Workshop, *San Francisco, CA*, April 2018.
- Grace Hopper Celebration of Women in Computing, *Houston, TX*, October 2016.
- CRA-W Grad Cohort Workshop, *San Diego, CA*, April 2016.

## Selected Media

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- Multiple Views on Visualization Research Explained, Blog Post. Michael Correll, *A Reflection on VIS2019: Or, How Doomed Are We?*, Nov. 2019. (<https://bit.ly/2r7emGd>)
- Uncharted Software, Blog Post. Rosa Romero-Gómez, *Highlights from IEEE VIS 2019*, Nov. 2019. (<https://bit.ly/2qwNOOD>)
- Tech Unbound Podcast, Ep. 3: *Battling Bias*, May 2019. (<https://www.spreaker.com/user/10751784/ep3-battling-bias>)