

# Rebecca Faust

Assistant Professor  
Department of Computer Science  
Tulane University

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## Current Appointment

Assistant Professor  
Department of Computer Science, Tulane University  
New Orleans, LA

## Research Interests

Data Visualization, Explainable Analytics, Human-AI Interaction, Human-in-the-loop analytics, Dimension Reduction, Semantic Interaction, Visual Debugging, Visualization for Data Analytics

## Education

Postdoctoral Researcher	Jan. 2022 - Dec. 2023
Virginia Tech	Blacksburg, VA
Mentor: Dr. Chris North	
<i>Interests:</i> Visual explanation in interactive projections	

PhD in Computer Science	Aug. 2016 - Dec. 2021
M.S. in Computer Science	Aug. 2016 - May 2020
University of Arizona	Tucson, AZ
Advisor: Carlos Scheidegger	
Dissertation: “A Visualization First Perspective on Understanding Program Behavior”	

Bachelor of Science in Computer Science	Aug. 2012 - May 2016
Bachelor of Arts in Mathematics	Aug. 2012 - May 2016
University of Montana	Missoula, MT
GPA: 3.94, High Honors	

## Research Funding

- Faust, North, Interactive Semantic Explanations for Deep Learning Visualizations, CRA/NSF, 01/2022-12/2023, \$280,768, 100% responsibility Faust.

## Publications

- **R. Faust**, C. Scheidegger, C. North. *Aardvark: Comparative Visualization of Data Analysis Scripts*. 2023 IEEE Visualization in Data Science (VDS), IEEE, 2023.
- H. Han, **R. Faust**, B. Norambuena, J. Li, S. Li, and C. North. *Explainable Interactive Projections of Images*. Machine Vision and Applications 34, 100 (2023).
- H. Han, **R. Faust**, B. Norambuena, R. Prabhu, T. Smith, S. Li, and C. North. *Explainable Interactive Projections for Image Data*. Advances in Visual Computing: 17th International Symposium, ISVC 2022, Proceedings, Part I. Cham: Springer International Publishing, 2022
- **R. Faust**, C. Scheidegger, K. Isaacs, W. Bernstein, M. Sharp, C. North. *Interactive Visualization for Data Science Scripts*. 2022 IEEE Visualization in Data Science (VDS), IEEE, 2022.
- **R. Faust**, D. Glickenstein, C. Scheidegger. *DimReader: Axis Lines that Explain Non-linear Projections*. IEEE Transactions on Visualization and Computer Graphics, 2018 (Proceedings of IEEE VIS 2018, 25.7% acceptance rate)

## Honors and Awards

Computing Innovations Postdoctoral Fellowship	Jan. 2022 - Dec. 2023
NIST GMSE Fellowship	May 2018 - Dec. 2021
University of Arizona Computer Science Graduate Teaching Award	May 2021
University of Arizona Computer Science Graduate Research Award	May 2019
Galileo Circle Scholar	May 2018
University of Arizona Graduate Fellowship	Aug. 2016
Mortar Board Outstanding Senior Award in Computer Science	May 2016
Mortar Board Outstanding Senior Award in Mathematics	May 2016
Montana University System Scholarship - full tuition waiver	Aug. 2012 - May 2016
University of Montana Honors Scholarship	Aug. 2012 - May 2016

## Teaching

**Instructor - University of Arizona** Summer 2020, Summer 2021

- CSc 245 - Introduction to Discrete Structures (Remote/Online)  
Instructed a class of about 60 students. The course was taught fully online.

## Talks

- “DimReader: Axis Lines that Explain Non-Linear Projections”, IEEE VIS Conference, Berlin, Germany, October 23, 2018
- “A Visualization First Perspective on Understanding Program Behavior”, Colloquium at University of Montana, November 30, 2021
- “Interactive Visualization for Data Science Scripts”  
Symposium on Visual Data Science at IEEE VIS, October 16, 2022
- “Aardvark: Comparative Visualization for Data Analysis Scripts”  
Symposium on Visual Data Science at IEEE VIS, October 23, 2023

## Posters

- *DimReader: Using auto-differentiation to explain non-linear projections.* R. Faust, C. Scheidegger, IEEE VIS 2017
- *Interactive Dimension Reduction with Explainable Deep Learning for Image Sorting.* R. Faust, NITRD 30th Symposium, 2022.

## Professional Activities

Reviewer	IEEE VIS 2023, TVCG 2023 IEEE VIS 2022, TVCG 2022, CG&A 2022 InfoVis 2020, VAST 2020, EuroVis 2020, TKDE 2020 InfoVIS 2019, EuroVis 2019
Student Volunteer	IEEE VIS 2018

## Department Service

Treasurer & Founding Member Graduate Student Council University of Arizona Computer Science Department	Sept. 2018 - May 2020
Graduate Student Member Department Head 5-year Review Committee	Mar. 2018 - May 2018
Graduate Student Member Computer Science Department 7-year Academic Program Review Committee	Sept. 2019 - Feb. 2020

## Additional Experience

<b>Engineering Laboratory, NIST</b> GMSE Summer Fellow Supervisor: Dr. William Bernstein <i>Research topic:</i> Visual Debugging for data science programs	Gaithersburg, MD Summer 2018, Summer 2019
<b>Agile Data Solutions</b> Software Testing and Development <i>Role:</i> Testing and front end development of content categorization software	Missoula, MT May 2014 - Dec. 2015

## Computer Skills

**Programming Languages:** Python, Javascript, HTML, C/C++, SQL, C#, R  
**Libraries and Tools:** Numpy, Scikit learn, D3, Vega-lite