

Rebecca Faust

Postdoc
Department of Computer Science
Virginia Tech

Email: rfaust@vt.edu
Web: rjfaust.github.io

Research Interests

- Data Visualization, Explainable and Human-in-the-loop Analysis Methods.

Education & Professional Experience

Postdoctoral Researcher Virginia Tech Mentor: Dr. Chris North <i>Interests:</i> Visual explanation in interactive projections	Jan. 2022 - Present Blacksburg, VA
PhD in Computer Science M.S. in Computer Science University of Arizona Advisor: Carlos Scheidegger Dissertation: “A Visualization First Perspective on Understanding Program Behavior”	Aug. 2016 - Dec. 2021 Aug. 2016 - May 2020 Tucson, AZ
Bachelor of Science in Computer Science Bachelor of Arts in Mathematics University of Montana GPA: 3.94, High Honors	Aug. 2012 - May 2016 Aug. 2012 - May 2016 Missoula, MT

Research Funding

- Faust, North, Interactive Semantic Explanations for Deep Learning Visualizations, CRA/NSF, 01/2022-12/2023, \$280,768, 100% responsibility Faust.
- Faust, North, Explainability for Interactive Analysis of Text Data, Dept of Defense and NSF IUCRC SHREC, 2023, \$46k, 100% responsibility Faust.

Publications

- Y. Bian, **R. Faust**, C. North. *NeuralSI: Neural Design of Semantic Interaction for Interactive Deep Learning*. In submission to: International Conference on Intelligent User Interfaces. 2022.

- H. Han, **R. Faust**, B. Norambuena, R. Prabhu, T. Smith, S. Li, and C. North. *Explainable Interactive Projections for Image Data*. International Symposium on Visual Computing, Springer, 2022.
- **R. Faust**, C. Scheidegger, K. Isaacs, W. Bernstein, M. Sharp, C. North. *Interactive Visualization for Data Science Scripts*. Symposium on Visualization in Data Science (VDS) at IEEE VIS, 2022.
- **R. Faust**, D. Glickenstein, C. Scheidegger. *DimReader: Axis Lines that Explain Non-linear Projections*. IEEE Transactions on Visualization and Computer Graphics (Proceedings of IEEE VIS 2018, 25.7% acceptance rate)

Honors and Awards

Computing Innovations Postdoctoral Fellowship	Jan. 2022 - Present
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

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 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

Graduate Student Member	Mar. 2018 - May 2018
Department Head 5-year Review Committee	

Graduate Student Member	Sept. 2019 - Feb. 2020
Computer Science Department 7-year Academic Program Review Committee	

Additional Experience

Engineering Laboratory, NIST
 GMSE Summer Fellow
 Supervisor: Dr. William Bernstein
Research topic: Visual Debugging for data science programs

Gaithersburg, MD
 Summer 2018, Summer 2019

Agile Data Solutions	Missoula, MT
Software Testing and Development	May 2014 - Dec. 2015
<i>Role:</i> Testing and front end development of content categorization software	

Computer Skills

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