Shayan Monadjemi

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Education

2023   **Ph.D. in Computer Science**, *Washington University in St. Louis*, St. Louis, MO.
Advisors: Alvitta Ottley and Roman Garnett
Dissertation Title: Learning from User Interactions and Providing Guidance in Visual Data Analysis
Dissertation Committee : Chien-Ju Ho, Roman Garnett, David Gotz, Alvitta Ottley, William Yeoh

2020   **M.S. in Computer Science**, *Washington University in St. Louis*, St. Louis, MO.

2018   **B.S. in Computer Science with Honors**, *University of Texas at Dallas*, Richardson, TX.
Minor in Mathematics, Cum Laude, Collegium V Honors, Computing Scholars Honors

Research Experience

Aug 2023 -   **Visual Analytics Research Scientist**, *Oak Ridge National Laboratory*, Oak Ridge, TN.
Data Science and Visualization Group, Cyber Resilience and Intelligence Division

Jun 2021 - Aug 2023   **Graduate Pathways Research Intern**, *NASA Ames Research Center*, Moffett Field, CA.
Data Science Group (DSG), Mentors: Drs. Nikunj Oza and Rodney Martin

Aug 2018 - Aug 2023   **Graduate Research Assistant**, *Washington University in St. Louis*, St. Louis, MO.
Visual Data Analysis Group (VDAG), Mentors: Drs. Alvitta Ottley and Roman Garnett

Jun 2018 - Aug 2018   **Research Intern**, *NASA Johnson Space Center*, Houston, TX.
Space Radiation Analysis Group (SRAG), Mentor: Dr. Shaowen Hu

Jun 2017 - Aug 2017   **Data Visualization Research Intern**, *Washington University in St. Louis*, St. Louis, MO.
Big Data Analytics REU Program, Mentor: Dr. Alvitta Ottley

Jun 2016 - Aug 2016   **Data Mining Research Intern**, *Washington State University*, Pullman, WA.
Smart Environments REU Program, Mentors: Drs. Mohammad Hossein Namaki and Yinghui Wu

Teaching Experience

Aug 2024 -   **Adjunct Professor**, *University of Tennessee*, Knoxville, TN.
Courses: Data Management and Visualization (DATA 202)

Jan 2021 - May 2021   **Assistant Instructor**, *Washington University in St. Louis*, St. Louis, MO.
Course: Advanced Visualization (CSE 557A)

Oct 2019 - Oct 2020   **Instructor**, *The Coding School*, Online.
Courses: Introduction to Programming in Python, Introduction to Artificial Intelligence

Aug 2015 - May 2018   **Mathematics Peer Tutor and Team Lead**, *University of Texas at Dallas*, Richardson, TX.
Courses: College Algebra (MATH 1306), Pre-Calculus (MATH 2312), Calculus (MATH 1325, 1326, 2413, 2414, 2417, 2419), Linear Algebra (MATH 2418)

Funding

2024   **Human-AI Collaborative Decision Making Facilitated by Interactive Visual Interfaces**, *Laboratory Directed Research & Development (LDRD) Seed Program, Oak Ridge National Laboratory*, $240,000, 1 year.
Principle Investigator: Shayan Monadjemi, Co-Investigator: Ayana Ghosh

2024   **iHub: Interactive Design of Autonomous Scientific Experiments**, *Laboratory Directed Research & Development (LDRD) Initiative on Interconnected Science Ecosystem (INTERSECT), Oak Ridge National Laboratory*, $370,000, 1 year.
Principle Investigator: Phillipe Austria, Co-Investigator: Shayan Monadjemi

Publications

2024   **Shayan Monadjemi**, Joon-Seok Kim, Licia Amichi, Debraj De, Gautam Malviya Thakur, and Carter Christopher. A Visual Analytic Platform for Interactive Validation of Human Mobility Simulations. GeoSim '24. Association for Computing Machinery, 2024.

2024   Sunwoo Ha, **Shayan Monadjemi**, and Alvitta Ottley. Guided by AI: Navigating Trust, Bias, and Data Exploration in AI-Guided Visual Analytics. *IEEE Transactions on Visualization and Computer Graphics (Under Review)*, 2024.

2023   **Shayan Monadjemi**, Mengtian Guo, David Gotz, Roman Garnett, and Alvitta Ottley. Human-Computer Collaboration for Visual Analytics: an Agent-based Framework. *Computer Graphics Forum*, 2023.

2023   Daniel Weckler, Bryan Matthews, **Shayan Monadjemi**, Shawn Wolfe, Nikunj Oza, and Hossein Eskandaripour. Monitoring airspace complexity and determining contributing factors. In *AIAA SciTech Forum and Exposition*, 2023.

2022   **Shayan Monadjemi**, Sunwoo Ha, Quan Nguyen, Henry Chai, Roman Garnett, and Alvitta Ottley. Guided Data Discovery in Interactive Visualizations via Active Search . *IEEE Transactions on Visualization and Computer Graphics*, 2022.

2022   Sunwoo Ha, **Shayan Monadjemi**, Roman Garnett, and Alvitta Ottley. A Unified Comparison of User Modeling Techniques for Predicting Data Interaction and Detecting Exploration Bias. *IEEE Transactions on Visualization and Computer Graphics*, 2022.

2022   Sneha Gathani, **Shayan Monadjemi**, Alvitta Ottley, and Leilani Battle. A grammar-based approach for applying visualization taxonomies to interaction logs. *Computer Graphics Forum*, 2022.

2020   **Shayan Monadjemi**, Roman Garnett, and Alvitta Ottley. Competing Models: Inferring Exploration Patterns and Information Relevance via Bayesian Model Selection. *IEEE Transactions on Visualization and Computer Graphics*, 2020.

2020   Shaowen Hu, **Shayan Monadjemi**, Janet E. Barzilla, and E. Semones. Acute radiation risks tool (ARRT) development for the upcoming human exploration missions. *Space Weather*, 18(12), 2020.

2020   Christabel Wayllace, Sunwoo Ha, Yuchen Han, Jiaming Hu, **Shayan Monadjemi**, William Yeoh, and Alvitta Ottley. DRAGON-V: Detection and Recognition of Airplane Goals with Navigational Visualization. *Proceedings of the AAAI Conference on Artificial Intelligence*, 34(09):13642–13643, 2020.

Technical Skills

Languages: Python, Java, MATLAB, R, C# Script, HTML, CSS, PHP, JavaScript, LaTeX

Libraries: React, Flask, Django, NodeJS, D3.js, Numpy, Pandas, Scikit-Learn, Plotly

Tools: Linux, Git (Command Line), MySQL, Jet Brains IDEs, Neo4j Graph Database, Cloud-based Servers

Professional Service

Conference Organization

2025   IEEE VIS Organization Committee Member (Web Co-Chair)

2024   IEEE VIS Organization Committee Member (Web Co-Chair)

Peer Review

IEEE Transactions on Visualization and Computer Graphics (TVCG).

IEEE Conference on Visualization and Visual Analytics (VIS).

ACM Conference on Advances in Geographic Information Systems (SIGSPATIAL).

EuroVis Conference.

Visualization for Data Science (VDS) Program Committee Member.

IEEE Conference on Visualization and Visual Analytics (VIS).

IEEE Conference on Visualization and Visual Analytics (VIS).

ACM Conference on Human Factors in Computing Systems (CHI).

Extracurricular and Leadership

Washington University in St. Louis

2019 - 2020 Representative, *Center for Teaching and Learning Graduate Student Advisory Group.*

2018 - 2020 Department Representative, *Graduate Student Senate.*

University of Texas at Dallas

2016 - 2017 Elected Council Member, *Collegium V Honors Program Student Board.*

2015 - 2017 Director of Industry, *Association of Computing Machinery Student Chapter.*

2015 - 2018 Volunteer Peer Mentor, *Freshman Mentor Program.*

2015 - 2018 Member, *Linux Users Group.*

2015 - 2018 Percussionist, *Wind Ensemble.*

Honors and Awards

2024 Honorable Mention Best Paper Award, *EuroVis Conference.*

2018 Honorable Mention, *National Science Foundation Graduate Research Fellowship Program.*

2018 Dean's Select Fellowship, *Washington University in St. Louis.*

2015 - 2018 Academic Excellence Scholarship for Continuing Students, *University of Texas at Dallas.*

2015 Engineering Academic Success Scholarship, *University of Texas at Dallas.*