# Chris Bryan

**Assistant Professor, Arizona State University**
**School of Computing and Augmented Intelligence**

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## Research Interests

Data visualization, human-computer interaction, privacy-enhancing technologies, interfaces for explainable AI/ML, NLP, and RL, augmented and virtual reality, visual perception and cognition.

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## Education

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| 2012 – 2018 | **Ph.D. in Computer Science, University of California, Davis**. Dissertation: "Advanced Techniques and Cognitive Considerations for Explanatory Visualization and Data Storytelling." Committee: Kwan-Liu Ma (advisor), Zhou Yu, Michael Neff. |
| 2004 – 2008 | **B.S. *cum laude* in Computer Science (Honors College), University of Arkansas.** Minors: Mathematics, Spanish. Thesis: "A Performance and Productivity Study using MPI, Titanium, and Fortress." Advisor: Amy Apon. |

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## Appointments & Prior Employment

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| 2018 – present | **Assistant Professor**. School of Computing and Augmented Intelligence, Arizona State University (Tempe, AZ). (*Note:* This school was renamed from the School of Computing, Informatics, and Decision Systems Engineering in 2021.) |
| 2018 | **Adjunct Professor**. Department of Computer Science, University of San Francisco (San Francisco, CA). |
| 2012 – 2018 | **Graduate Student Researcher**. Visualization and Interface Design Innovation (VIDi) Group, University of California, Davis (Davis, CA). |
| 2017 | **Graduate Student Intern**. Center for Applied Scientific Computing (CASC), Lawrence Livermore National Laboratory (Livermore, CA). |

| 2013 – 2016 | **Graduate Student Intern**. Data Science at Scale (DSS) Group, Los Alamos National Laboratory (Los Alamos, NM). |
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| 2009 – 2012 | **Programmer Analyst**. Integrated Capacity Solutions (ICS) Division, J.B. Hunt Transport Services, Inc. (Lowell, AR). |

# Honors

| 2024 | Dean's Dissertation Award for my student Anjana Arunkumar (awarded to up to 5% of the top PhD graduates from the Ira A Fulton Fulton Schools of Engineering) |
|---|---|
| 2024 | Top 5% Teaching Faculty Award in the Ira A. Fulton Schools of Engineering for AY 2023 – 2024 |
| 2023 | Top 5% Teaching Faculty Award in the Ira A. Fulton Schools of Engineering for AY 2022 – 2023 |
| 2021 | Outstanding Guest Editor Award for *IEEE Computer Graphics & Applications Special Issue on Powering Visualization with Deep Learning* |
| 2020 | Honorable Mention (top 25%) at the VAST Challenge 2020 for *TotemFinder: A Visual Analytics Approach for Image-based Key Players Identification.* |
| 2017 | Honorable Mention (top 5%) at IEEE PacificVis Symposium (PacificVis 2017) for *MeetingVis: Visual Narratives to Assist in Recalling Meeting Context and Content.* |

# Research Publications

**Peer-Reviewed Journal Publications**

[J1]   Aditi Mishra, Bretho Danzy, Utkarsh Soni, Anjana Arunkumar, Jinbin Huang, Bum Chul Kwon, and Chris Bryan. "PromptAid: Visual Prompt Exploration, Perturbation, Testing and Iteration for Large Language Models." *IEEE Transactions on Visualization and Computer Graphics, 2025*.

[J2]   Xumeng Wang, Shuangcheng Jiao, and Chris Bryan. "Defogger: A Visual Analysis Approach for Data Exploration of Sensitive Data Protected by Differential Privacy." *IEEE Transactions on Visualization and Computer Graphics* 31, no. 1 (2025): 448–458.

[J3]   Anjana Arunkumar, Lace Padilla, and Chris Bryan. "Mind Drifts, Data Shifts: Utilizing Mind Wandering to Track the Evolution of User Experience with Data Visualizations." *IEEE Transactions on Visualization and Computer Graphics* 31, no. 1 (2025): 1139–1179.

[J4]    Anjana Arunkumar, Lace Padilla, Gi-Yeul Bae, and Chris Bryan. "Image or Information? Examining the Nature and Impact of Visualization Perceptual Classification." *IEEE Transactions on Visualization and Computer Graphics* 30, no. 1 (2024): 1030–1040.

[J5]    Anjana Arunkumar, Shubham Sharma, Rakhi Agrawal, Sriram Chandrasekaran, and Chris Bryan. "LINGO: Visually Debiasing Natural Language Instructions to Support Task Diversity." *Computer Graphics Forum* 42, no. 3 (2023): 409–421.

[J6]    Jinbin Huang, Aditi Mishra, B.C. Kwon, and Chris Bryan. "ConceptExplainer: Understanding the Mental Model of Deep Learning Algorithms via Interactive Concept-based Explanations." *IEEE Transactions on Visualization and Computer Graphics* 29, no. 1 (2022): 831–841.

[J7]    Anjana Arunkumar, Andrea Pinceti, Lalitha Sankar, and Chris Bryan. "PMU Tracker: A Visualization Platform for Egocentric Event Propagation Analysis in the Power Grid." *IEEE Transactions on Visualization and Computer Graphics* 29, no. 1 (2022): 1081–1090.

[J8]    Anjana Arunkumar, Nitin Gupta, Andrea Pinceti, Lalitha Sankar, and Chris Bryan. "PMUVis: A Large Scale Platform to Assist Power System Operators in a Smart Grid." *IEEE Computer Graphics and Applications* 42, no. 6 (2022): 84–95.

[J9]    Jian Zhao, Shenyu Xu, Senthil Chandrasegaran, Chris Bryan, Fan Du, Aditi Mishra, Xin Qian, Yiran Li, and Kwan-Liu Ma. "ChartStory: Automated Partitioning, Layout, and Captioning of Charts into Comic-Style Narratives." *IEEE Transactions on Visualization and Computer Graphics* 29, no. 2 (2021): 1384–1399.

[J10]   Chris Bryan, Aditi Mishra, Hidekazu Shidara, and Kwan-Liu Ma. "Analyzing Gaze Behavior for Text-Embellished Narrative Visualizations under Different Task Scenarios." *Visual Informatics* 4, no. 3 (2020): 41–50.

[J11]   Xumeng Wang, Chris Bryan, Yiran Li, Rusheng Pan, Yanling Liu, Wei Chen, and Kwan-Liu Ma. "Umbra: A Visual Analysis Approach for Defense Construction against Inference Attacks on Sensitive Information." *IEEE Transactions on Visualization and Computer Graphics* 28, no. 7 (2020): 2776–2790.

[J12]   Xumeng Wang, Wei Chen, Jia-Kai Chou, Chris Bryan, Huihua Guan, Wenlong Chen, Rusheng Pan, and Kwan-Liu Ma. "GraphProtector: A Visual Interface for Employing and Assessing Multiple Privacy Preserving Graph Algorithms." *IEEE Transactions on Visualization and Computer Graphics* 25, no. 1 (2018): 193–203.

[J13]   Shenyu Xu, Chris Bryan, Jianping Kelvin Li, Jian Zhao, and Kwan-Liu Ma. "Chart Constellations: Effective Chart Summarization for Collaborative and Multi-User Analyses." *Computer Graphics Forum* 37, no. 3 (2018): 75–86.

[J14]   Yang Shi, Chris Bryan, Sridatt Bhamidipati, Ying Zhao, Yaoxue Zhang, and Kwan-Liu Ma. "MeetingVis: Visual Narratives to Assist in Recalling Meeting Context and Content." *IEEE Transactions on Visualization and Computer Graphics* 24, no. 6 (2018): 1918–1929.

[J15]   Chris Bryan, Kwan-Liu Ma, and Jonathan Woodring. "Temporal summary images: An Approach to Narrative Visualization via Interactive Annotation Generation and Placement." *IEEE Transactions on Visualization and Computer Graphics* 23, no. 1 (2016): 511–520.

[J16]   Chris Bryan, Gregory Guterman, Kwan-Liu Ma, Harris Lewin, Denis Larkin, Jaebum Kim, Jian Ma, and Marta Farre. "Synteny Explorer: An Interactive Visualization Application for Teaching Genome Evolution." *IEEE Transactions on Visualization and Computer Graphics* 23, no. 1 (2016): 711–720.

**Peer-Reviewed Conference & Symposium Publications**

*[C1]*   Anjana Arunkumar, Lace Padilla, and Chris Bryan. "Lost in Translation: How Does Bilingualism Shape Reader Preferences for Annotated Charts?" *accepted to the 2025 CHI Conference on Human Factors in Computing Systems*.

*[C2]*   Michael Kintscher, Jinbin Huang, Anjana Arunkumar, Ashish Amresh, and Chris Bryan. "Measuring and Comparing Collaborative Visualization Behaviors in Desktop and Augmented Reality Environments." *In Proceedings of the 29th ACM Symposium on Virtual Reality Software and Technology (VRST), pp. 1–11. ACM, 2023.*

[C3]   Anjana Arunkumar, Swaroop Mishra, Bhavdeep Sachdeva, Chitta Baral, and Chris Bryan. "Real-Time Visual Feedback to Guide Benchmark Creation: A Human-and-Metric-in-the-Loop Workflow." *In Proceedings of the 17th Conference of the European Chapter of the Association for Computational Linguistics*, pp. 2899–2927. ACL, 2023.

[C4]   Aditi Mishra, Utkarsh Soni, Jinbin Huang, and Chris Bryan. "Why? Why Not? When? Visual Explanations of Agent Behavior in Reinforcement Learning." In *2022 IEEE Pacific Visualization Symposium (PacificVis)*, pp. 111–120. IEEE, 2022.

[C5]   Aditi Mishra, Shashank Ginjpalli, and Chris Bryan. "News Kaleidoscope: Visual Investigation of Coverage Diversity in News Event Reporting." In *2022 IEEE Pacific Visualization Symposium (PacificVis)*, pp. 131–140. IEEE, 2022.

[C6]   Anjana Arunkumar, Shashank Ginjpalli, and Chris Bryan. "Bayesian Modelling of Alluvial Diagram Complexity." In *2021 IEEE Visualization Conference (VIS)*, pp. 51–55. IEEE, 2021.

[C7]   Senthil Chandrasegaran, Chris Bryan, Hidekazu Shidara, Tung-Yen Chuang, and Kwan-Liu Ma. "TalkTraces: Real-time Capture and Visualization of Verbal Content in Meetings." In *Proceedings of the 2019 CHI Conference on Human Factors in Computing Systems*, pp. 1–14. 2019.

[C8]   Jia-Kai Chou, Chris Bryan, Jing Li, and Kwan-Liu Ma. "An Empirical Study on Perceptually Masking Privacy in Graph Visualizations." In *2018 IEEE Symposium on Visualization for Cyber Security (VizSec)*, pp. 1–8. IEEE, 2018.

[C9]   Jacqueline Chu, Chris Bryan, Min Shih, Leonardo Ferrer, and Kwan-Liu Ma. "Navigable Videos for Presenting Scientific Data on Affordable Head-Mounted Displays." In *Proceedings of the 8th ACM on Multimedia Systems Conference*, pp. 250–260. 2017.

[C10] Jia-Kai Chou, Chris Bryan, and Kwan-Liu Ma. "Privacy Preserving Visualization for Social Network Data with Ontology Information." In *2017 IEEE Pacific Visualization Symposium (PacificVis)*, pp. 11–20. IEEE, 2017.

[C11] Chris Bryan,, Xue Wu, Susan Mniszewski, and Kwan-Liu Ma. "Integrating Predictive Analytics into a Spatiotemporal Epidemic Simulation." In *2015 IEEE Conference on Visual Analytics Science and Technology (VAST)*, pp. 17–24. IEEE, 2015.

[C12] Susan Mniszewski, C. A. Manore, Chris Bryan, Sara Y. Del Valle, and Douglas Roberts. "Towards a Hybrid Agent-Based Model for Mosquito Borne Disease." In *Summer Computer Simulation Conference:(SCSC 2014): 2014 Summer Simulation Multi-Conference: Monterey, California, USA, 6-10 July 2014. Summer Computer Simulation Conference (2014: Monterey, Calif.)*, vol. 2014. NIH Public Access, 2014.

[C13] Chris Bryan, Kwan-Liu Ma, and Yang-Chih Fu. "An Interactive Visualization Interface for Studying Egocentric, Categorical, Contact Diary Datasets." In *Proceedings of the 2013 IEEE/ACM International Conference on Advances in Social Networks Analysis and Mining*, pp. 771–778. 2013.

**Peer-Reviewed Workshop Publications**

[W1] Ayan Biswas, Aditi Mishra, Meghanto Majumder, Subhashis Hazarika, Alexander Most, Juan Castorena, Chris Bryan, Patrick McCormick, James Ahrens, Earl Lawrence, and Aric Hagberg. "Filling the Void: Data-Driven Machine Learning-based Reconstruction of Sampled Spatiotemporal Scientific Simulation Data." In *SC24-W: Workshops of the International Conference for High Performance Computing, Networking, Storage and Analysis*, pp. 290–299, 2024

[W2] Jinbin Huang, Chen Chen, Aditi Mishra, Bum Chul Kwon, Zhicheng Liu, and Chris Bryan. "On CLIP's Ability of Analyzing Fake Images at a Large Scale: Why are They Fake?" In *GenAICHI Generative AI and CHI Workshop at ACM SIGCHI 2024.*

[W3] Jinbin Huang, Shuang Liang, Qi Xiong, Yu Gao, Chao Mei, Yi Xu, and Chris Bryan. "SPARVIS: Combining Smartphone and Augmented Reality for Visual Data Analytics." In *2022 IEEE International Symposium on Mixed and Augmented Reality Adjunct (ISMAR-Adjunct)*, pp. 111–117. IEEE, 2022. (presented in the *Workshop on Visual Analytics in Immersive Environments (VAinIE)* at ISMAR 2022)

[W4] Jinbin Huang, Jonathan Plasencia, Dianna Bardo, Nicholas Huber, Erik Ellsworth, Steven Zangwill, and Chris Bryan. "Phoenix Virtual Heart: A Hybrid VR-Desktop Visualization System for Cardiac Surgery Planning and Education." In *2021 IEEE Workshop on Visual Analytics in Healthcare (VAHC)*, pp. 36–40. IEEE, 2021.

[W5] Anjana Arunkumar, Swaroop Mishra, and Chris Bryan. "A Visual Exploration of Fair Evaluation for ML – Bridging the Gap Between Research and the Real World." In *3rd Workshop on Visualization for AI Explainability at IEEE VIS 2020*.

[W6] Anjana Arunkumar, Swaroop Mishra, Bhavdeep Singh Sachdeva, Chitta Baral, and Chris Bryan. "Real-Time Visual Feedback for Educative Benchmark Creation: A Human-and-Metric-in-the-Loop

Workflow." In *NeurIPS 2020 Workshop on Human And Machine in-the-Loop Evaluation and Learning Strategies (HAMLETS 2020)*.

[W7] Swaroop Mishra, Anjana Arunkumar, Chris Bryan, and Chitta Baral. "Our Evaluation Metric Needs an Update to Encourage Generalization." In *ICML 2020 Workshop on Uncertainty and Robustness in Deep Learning.*

[W8] Chris Bryan, Susan Mniszewski, and Kwan-Liu Ma. "Integrating Predictive Visualization with the Epidemic Disease Simulation System." In *IEEE VIS 2014 Workshop on Visualization for Predictive Analytics*.

[W9] Chris Bryan, Wes Emeneker, and Amy Apon. "A Performance and Productivity Study using MPI, Titanium, and Fortress." In *IEEE International Conference on High Performance Computing (HiPC08) Student Symposium, 2008.*

**Peer-Reviewed Contest Entries**

[E1] Jinbin Huang, Aditi Mishra, Anjana Arunkumar, and Chris Bryan. "TotemFinder: A Visual Analytics Approach for Image-based Key Players Identification." In 2020 IEEE Conference on Visual Analytics Science and Technology (VAST Challenge).

[E2] Hidekazu Shidara, Chris Bryan, Oh-Hyun Kwon, Kwan-Liu Ma. "North Korea: Real or Paper Tiger?" In *IEEE PacificVis 2018 Visual Storytelling Contest*.

[E3] Chris Bryan, Keshav Dasu, Sravya Divakarla, Kwan-Liu Ma. "Summarizing the U.S. Presidential Election Day 2016" In *IEEE PacificVis 2017 Visual Storytelling Contest*.

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# Invited Talks & Presentations

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| Nov 2024 | Invited Talk | *Using Visual Analytics to Support Human Interpretable AI Workflows*, Scientific Computing and Imaging Institute (SCI) Seminar, University of Utah (Salt Lake City, UT) |
| July 2024 | Invited Talk | *Accessible and Interpretable AI-Driven Workflows through Advanced Human-Centric Interfaces* (Los Alamos, NM) |
| May 2024 | Invited Presentation | *Advanced Interfaces and Human-in-the-Loop Workflows for Next Generation AI*, NSF AI/GenAI CARTA Symposium (Piscataway, NJ) |
| Jan 2024 | Invited Demo | ASU Space Futures Convening (Scottsdale, AZ) |
| June 2022 | Invited Talk | VIS Summer Camp (Atlantic City, NJ) |
| April 2022 | Invited Talk | *Exploring and Explaining Complex Data at the Sonoran Visualization Laboratory*, CNS Research Showcase (Indiana |

University).

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| Aug 2021 | Invited Talk | VIS Summer Camp (Minneapolis, MN). |
| Feb 2020 | Invited Talk | *Human-Centered Visualization Design*, ASU Tableau User Group (Tempe, AZ). |
| July 2019 | Invited Talk | *Interactive Visualization for Exploring and Explaining Complex Data*, Los Alamos National Laboratory (Los Alamos, NM). |
| Nov 2019 | Invited Talk | *Visualization of Complex Data for Nonexperts*, ASU SFIS Unplugged (Tempe, AZ). |
| Oct 2018 | Conference Presentation | *An Empirical Study on Perceptually Masking Privacy in Graph Visualization*, IEEE VizSec (Berlin, Germany). |
| March 2018 | Invited Talk | *From Explanatory to Exploratory Visualization*, University of San Francisco (San Francisco, CA). |
| June 2018 | Conference Presentation | *Chart Constellations: Effective Chart Summarization for Collaborative and Multi-User Analyses*, EuroGraphics Conference on Visualization (Brno, Czech Republic). |
| June 2017 | Conference Presentation | *Navigable Videos for Presenting Scientific Data on Affordable Head-Mounted Displays,* ACM Multimedia Systems Conference (Taipei, Taiwan). |
| April 2017 | Conference Presentation | *North Korea: Real or Paper Tiger?*, IEEE Pacific Visualization Symposium (Seoul, South Korea). |
| Oct 2016 | Conference Presentation | *Temporal summary images: An approach to narrative visualization via interactive annotation generation and placement*, IEEE VIS Conference (Baltimore, MD). |
| Oct 2016 | Conference Presentation | *Synteny Explorer: An Interactive Visualization Application for Teaching Genome Evolution*, IEEE VIS Conference (Baltimore, MD). |
| March 2016 | Invited Talk | *Developing New Visual Approaches that Provide Insight into Scientific and Social Media Data*, UC Davis RISE Symposium (Davis, CA). |
| Oct 2015 | Conference Presentation | *Integrating Predictive Analytics into a Spatiotemporal Epidemic Simulation*, IEEE VIS Conference (Chicago, IL). |

| Nov 2014 | Conference Presentation | *Integrating Predictive Visualization with the Epidemic Disease Simulation System*, IEEE VIS Conference (Paris, France). |
| Aug 2013 | Conference Presentation | *An Interactive Visualization Interface for Studying Egocentric, Categorical, Contact Diary Datasets,* IEEE/ACM International Conference on Advances in Social Network Analysis and Mining (Niagara Falls, Canada). |

# Professional Activities & External Service

**Steering Committee Member**

| 2022 – present | IEEE Symposium on Visualization for Cyber Security (VizSec) |

**Organizing Committee Member**

| 2023 – present | IEEE VIS Conference |
| 2020 – 2022, 2024 – present | IEEE PacificVis Visualization Symposium (PacificVis) |
| 2019 – 2022 | IEEE Symposium on Visualization for Cyber Security (VizSec) |
| 2021 | Arizona VIS 2021 (IEEE VIS Satellite Event) |

**Subcommittee Member**

| 2023 – present | Associate Chair for Visualization Subcommittee, ACM Conference on Human Factors in Computing Systems (SIGCHI) |

**Program Committee Member**

| 2024 – present | EuroGraphics Conference on Visualization (EuroVis), State-of-the-Art Reports (STARs) Tract |
| 2023 – present | EuroGraphics Conference on Visualization (EuroVis), Short Papers Tract |
| 2022 – present | IEEE VIS Conference |
| 2021 – present | EuroGraphics Conference on Visualization (EuroVis) |
| 2020 – present | IEEE VIS Conference, Short Papers Tract |
| 2019 – present | IEEE Pacific Visualization Symposium (PacificVis) |

| 2020 | ACM International Conference on Supporting Group Work (GROUP) |
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| 2020 | International Conference on Information Visualization Theory and Applications (IVAPP) |
| 2019 | IEEE VIS Conference (SciVis Short Papers Tract) |
| 2018 – 2022 | IEEE Symposium on Large Data Analysis and Visualization (LDAV) |
| 2018 – 2020, 2022 | IEEE International Conference On Big Data Service And Applications (BigData-Service) |
| 2018, 2022 – 2024 | International Symposium on Visual Computing (ISCV) |

**Journal Editing**

| 2020 – 2021 | Guest Associate Editor, *IEEE Computer Graphics & Applications*, Special Issue on Powering Visualization with Deep Learning (co-editors: Siwei Fu, Jian Zhao, Yingcai Wu) |
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**Major Journals & Conferences for which I regularly review**

IEEE VIS Conference, IEEE Transactions on Visualization and Computing (TVCG), ACM Conference on Human Factors in Computing Systems (CHI), IEEE Pacific Visualization Symposium (PacificVis), Eurographics Conference on Visualization (EuroVis), IEEE Virtual Reality (VR), ACM Conference on Computer-Supported Cooperative Work and Social Computing (CSCW), ACM Symposium on User Interface Software and Technology (UIST)

**Proposal Reviewing**

| 2019 – present | National Science Foundation |
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# Internal Service at ASU

| 2024 – present | **Computer Science Graduate Program Committee (GPC)**, School of Computing and Augmented Intelligence |
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| 2023 – present | **Student Organization Faculty Advisor**, ACM SIGGRAPH Student Chapter at ASU |
| 2021 – present | **Fulton Undergraduate Research Initiative (FURI) Review Committee**, Ira A. Fulton Schools of Engineering. |
| 2019 – present | **Speaker at E2 Camps for Incoming Freshmen Engineering Students**, Ira A. Fulton Schools of Engineering |
| 2023 – 2024 | **Search Committee Chair**, Computer Graphics and Virtual Reality Faculty Search, |

School of Computing and Augmented Intelligence.

2022 – 2023    **Search Committee Chair**, Human Centered and Affective Computing Faculty Search, School of Computing and Augmented Intelligence.

2018 – 2022    **Graduate Admissions Committee**, School of Computing and Augmented Intelligence

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## Teaching Experience

*Note: Classes are taught at ASU unless otherwise specified.*

| | |
|---|---|
| Spring 2025 | CSE 578: Data Visualization (177 students) |
| Fall 2024 | CSE 578: Data Visualization (171 students) |
| | CSE 478: Foundations in Data Visualization (164 students) |
| Spring 2024 | CSE 578: Data Visualization (145 students) |
| Fall 2023 | CSE 578: Data Visualization (168 students) |
| | CSE 478: Foundations in Data Visualization (112 students) |
| Spring 2023 | CSE 578: Data Visualization (133 students) |
| Fall 2022 | CSE 578: Data Visualization (148 students) |
| | CSE 494: Foundations of Data Visualization (100 students) |
| Spring 2022 | CSE 494: Foundations of Data Visualization (88 students) |
| Fall 2021 | CSE 578: Data Visualization (148 students) |
| | CSE 494: Foundations of Data Visualization (75 students) |
| Fall 2020 | CSE 578: Data Visualization (173 students) |
| | CSE 494: Foundations of Data Visualization (94 students) |
| | ASU 101: The ASU Experience (49 students, 3 sections) |
| Fall 2019 | CSE 578: Data Visualization (126 students) |
| Spring 2019 | CSE 310: Algorithms & Data Structures (128 students) |
| Fall 2018 | CSE 578: Data Visualization (128 students) |
| Spring 2017 | CS 212: Software Development (30 students, at University of San Francisco) |

Spring 2016          ECS 163: Information Interfaces (52 Students, at University of California, Davis)

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# Student Advising & Mentoring

**Ph.D. Students**

2025 – present          Yuki Ueno

2024 – present          Zhuojun Jiang

2023 – present          Bretho Danzy

2021 – present          Michael Kintscher

2019 – 2024          Jinbin Huang (Dissertation: "Understand AI and Go Beyond: Designing Interactive Visual Analytics Systems for Efficient Deep Learning Interpretability and Development")

2019 – 2024          Aditi Mishra (Dissertation: "Unlocking Artificial Intelligence: Interactive Visualizations for Novice Users to Explore, Understand, and Trust")

2019 – 2024          Anjana Arunkumar (Dissertation: "The D.U.C.K. Bridge: Empowering Non-Experts in Data Visualization")

**Masters Students**

*Thesis Students*

2024 – present          Sruthi Parimi

2024 – present          Utkarsh Sharma

2023 – 2024          Shubham Chawla (Thesis: "Effects of an AI Intervention in a Financial Game Scenario")

2022 – 2024          Manimozhi Sekar (Thesis: "Privacy-Preserving Visualizations using Vega-Lite")

2022 – 2024          Jai Narula (Thesis: "Developing an Assistive Education Tool for Data Visualization")

2021 – 2022          Shubham Sharma (Thesis: "Why Pop? A System to Explain How Deep Learning Models Classify Music")

2021 – 2022          Jose Elenes (Thesis: "Anomaly Mining and Visualization of Autonomous Aerial Vehicles")

2019 – 2020          Michael Kintscher (Thesis: "Exploring the Impact of Augmented Reality on Collaborative Decision-Making in Small Teams")

*Research Assistantships*

| 2020 – 2021 | Nitin Gupta |
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*ASU Master's Opportunity for Research in Engineering (MORE) Students*

| 2024 | Kannak Sharma |
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| 2024 | Utkarsh Sharma |
| 2023 | Jai Narula |

**Undergraduate Students**

*Barrett Honors College Thesis Students*

| 2024 | Roshni Deb (Creative Project: "Visualizing Space-Related Activities Across the World") |
|---|---|
| 2023 | Dheeti Deliwala (Creative Project: "A Computational Analysis on the Efficacy of Independent Redistricting Commissions") |
| 2021 – 2022 | Andrew Murwin (Thesis: "The Efficacy of Different Time Steps in Data when Predicting Cryptocurrency Prices") |
| 2021 – 2022 | Nandika Goyal (Thesis: "Augnosis: Self-Diagnosis in Augmented Reality") |
| 2020 – 2021 | Shashank Ginjpalli (Thesis: "Modeling the Complexity of Sankey Diagrams") |
| 2019 – 2020 | Avi Goodman (Thesis: "Predicting the Outcome of a Pitch Given the Type of Pitch for any Baseball Scenario") |

*ASU Fulton Undergraduate Research Initiative (FURI) Students*

| 2020 – 2021 | Shashank Ginjpalli |
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*Research Assistantships*

| 2021 – 2022 | Jaimie Liu |
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| 2019 – 2020 | Danlin Li |
| 2019 | Sarthik Soni (IIT Bangalore) |

*Capstone Teams*

| 2024 — present | Trevor Frerichs, Sherwin Wang, Noam Yakar, Owen Eaton, Adrian Ciotinga (Project: "Privacy Preserving Visualization Tool") |
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| 2024 — present | Tejovrash Acharya, Mathm Alkaabi, Nianwen Dan, Esteban Lee, Riccardo De Maria (Project: "CODAP Privacy Plugin") |
| 2022 — 2023 | Briggs Richardson, Nolan Takeshita, Sushrut Nunna, Damandeep Singh, Jacob Hensley (Project: "Qualitative Coding Desktop App") |
| 2021 — 2023 | Liyah Coleman, Kaixuan Han, Logan Bock, Jesus Carrera, Guadalupe Higuera |

(Project: "AR+Smartphone Data Visualization App")

| 2021 — 2022 | Austin Frost, Evan Garvey, Jason Manuel, Matthew Zamora (Project: "Building A Collaborative Virtual Robotics IDE and Simulator for Teaching Engineering Concepts.") |

# Student Committee Memberships

*Note: Students and advisors are at ASU unless otherwise specified.*

**Ph.D. Students**

| 2022 – present | Yixuan Wang (Advisor: Ross Maciejewksi) |
| 2022 – present | Fan Lei (Advisor: Ross Maciejewski) |
| 2022 – present | Vishnu Kakaraparthi (Advisor: Troy McDaniel) |
| 2022 – 2024 | Danielle Jacobs (Dissertation: "Towards a Cyber Harm Composite Indicator Framework for Citizens," Advisor: Troy McDaniel) |
| 2022 – 2024 | Kanchan Chowdhury (Dissertation: "Exploration of Location-Aware Machine Learning for Spatiotemporal Vector and Raster Datasets," Advisor: Mohamed Sarwat) |
| 2023 – 2024 | Utkarsh Soni (Dissertation: "Towards More Accessible Human-AI Interactions in Sequential Decision-Making Tasks," Advisor: Subbarao Kambhampati) |
| 2019 – 2023 | Tiankai Xie (Dissertation: "Explaining the Vulnerabilities of Machine Learning through Visual Analytics," Advisor: Ross Maciejewski) |
| 2022 – 2022 | Graziano Blasilli (Dissertation: "Cyber Threats Management using Visual Analytics," Advisor: Giuseppe Santucci, University: Sapienza Università di Roma) |
| 2021 – 2022 | Jordan Miller (Dissertation: " "Can I consider you my friend?" Moving Beyond One-Sided Conversation in Social Robotics," Advisor: Troy McDaniel) |
| 2020 – 2022 | Venkata Meduri (Dissertation: "Human-in-the-Loop Machine Learning Systems for Data Integration and Predictive Analytics," Advisor: Mohamed Sarwat) |
| 2019 – 2022 | Rui Zhang (Dissertation: "Methods for Multiclass Geospatial Data Visualization," Advisor: Ross Maciejewski) |

**MS Students**

| 2023 – 2024 | Kevin John (Thesis: "AdapTics: A Toolkit for Creative Design and Integration of Real-Time Adaptive Mid-Air Ultrasound Tactons," Advisor: Hasti Seifi) |

| 2023 | Suraj Jyothi Unni (Thesis: "Towards Robust VQA: Evaluations and Methods," Advisor: Huan Liu) |
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| 2023 | Viraj Thakka (Thesis: "Optimizing Consistency and Performance Trade-Off in Distributed Log-Structured Merge-Tree-based Key-Value Stores," Advisor: Zhichao Cao) |
| 2023 | Sheetal Chandrakant Mohite (Thesis: "A Unified Visual and Persistent RESTful Tool for Modular and Hierarchical Modeling," Advisor: Hessam Sarjoughian) |
| 2020 – 2021 | Rostyslav Hnatyshyn (Thesis: "A Visual Analytics Workflow for Detecting Transition Regions in Large-Scale Molecular Dynamics Simulations," Advisor: Ross Maciejewski) |
| 2020 – 2021 | Kushal Reddy Papakannu (Thesis: "Examining User Engagement via Facial Expressions in Augmented Reality with Dynamic Time Warping," Advisor: Sharon Hsaio) |
| 2020 – 2021 | Nithiya Uppara (Thesis: "Effects of Image Captioning with Description on the Working Memory," Advisor: Troy McDaniel) |

# Research Support

**External Funding**

| NSF 2024 – 2027 | (Co-PI) DGE-2350036: *SaTC: EDU: Investigating the Role of Storytelling Visualization in Privacy Education*. $500,000. (PI: Rakibul Hasan, my share: 48%). |
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| NSF 2022 – present | (PI) CSN-2224066: *SaTC: CORE: Small: Effective Design and Recommendation for Privacy-Preserving Data Visualizations*. $550,000. |
| NSF 2022 – present | (PI) DUE-2216452: *IUSE: Developing and Evaluating a Classroom Orchestration Toolkit for Visualization Education*. $300,000 (co-PI: Ashish Amresh, his share: 5%). |
| Adobe Research 2021 | (PI) *Researching Collaborative Creative Systems* (Unrestricted Gift). $10,000. |
| Phoenix Children's Hospital 2020 – 2021 | (PI) *Development of a Virtual Reality Experience for Treatment Planning and for Patient and Family Education*. $56,871. |
| NSF 2019 – 2022 | (Co-PI) OAC-1934766: *Collaborative Research: High-Dimensional Spatio-Temporal Data Science for a Resilient Power Grid: Towards Real-Time Integration of Synchrophasor Data*. $1,500,000 (PI: Lalitha Sankar, my share: 17%). |

**Internal (ASU-based) and Seed Funding**

Interplanetary Initiative 2023 – present

(PI) *Global Heatmap of Space Activities.* $104,814
*AY 2022 – 2023: $51,081*
*AY 2023 – 2024:* $28,733
AY 2024 – 2025: $25,000

Edson Foundation 2021 – 2022

(PI) *Developing CarePro Virtual*. $15,000.