

# Ross Maciejewski

## Curriculum Vitae

School of Computing, Informatics, and Decision Systems Engineering, Arizona State University  
699 S. Mill Avenue, Suite 344, Tempe, AZ 85281, USA  
Office : (480) 965-2785 E-mail : [rmacieje@asu.edu](mailto:rmacieje@asu.edu) Web : <http://rmaciejewski.faculty.asu.edu>

### EDUCATION

- Ph.D.** *Computer Engineering, **Purdue University**, West Lafayette, IN; Dec. 2009; David S. Ebert (PhD advisor); Dissertation: “Exploring Multivariate Data Through the Application of Visual Analytics”*
- M.S.** *Computer Engineering, **Purdue University**, West Lafayette, IN; Aug. 2004; David S. Ebert (MS advisor); Thesis: “Exploring the Value of Adding Haptic and Stereoscopic Rendering to Volume Modeling”*
- B.S.** *Computer Science, **University of Missouri**, Columbia, MO; Dec. 2001*
- B.S.** *Computer Engineering, **University of Missouri**, Columbia, MO; Dec. 2001*
- B.S.** *Electrical Engineering, **University of Missouri**, Columbia, MO; Dec. 2001*

### PROFESSIONAL EXPERIENCE

- Aug. 2017 – present** *Director, Center for Accelerating Operational Efficiency, Department of Homeland Security Center of Excellence*
- Aug. 2021 - present** *Professor, School of Computing, Informatics and Decision Systems Engineering, **Arizona State University**, Tempe, AZ*
- Aug. 2017 – July 2021** *Associate Professor, School of Computing, Informatics and Decision Systems Engineering, **Arizona State University**, Tempe, AZ*
- Aug. 2011 – July 2017** *Assistant Professor, School of Computing, Informatics and Decision Systems Engineering, **Arizona State University**, Tempe, AZ*
- Jan. 2010 – July 2011** *Visiting Assistant Professor, School of Electrical and Computer Engineering, **Purdue University**, West Lafayette, IN*

### HONORS & AWARDS

- Mar. 2018** *Computational Visual Media Journal Honorable Mention, Ma, Y., Chen, W., Ma, X., Xu, J., Huang, X., Maciejewski, R., Tung, A., “EasySVM: A Visual Analysis Approach for Open-Box Support Vector Machines”*
- Feb. 2018** *ACM CHI Honorable Mention, Zhang, J., Surakitbanharn, C., Elmqvist, N., Maciejewski, R., Qian, Z., Ebert, D. S., “TopoText: Context-Preserving Text Data Exploration Across Multiple Spatial Scales”*
- June 2017** *EuroVis Best Paper, Lukasczyk, J., Maciejewski, R., Garth, C., Weber, G., Leitte, H., “Nested Tracking Graphs”*
- May 2017** *Fulton Faculty Exemplar (2017), Ira A. Fulton Schools of Engineering, Arizona State University*
- May 2017** *Best Researcher Award: Junior Faculty (2016), School of Computing, Informatics and Decision Systems Engineering, Arizona State University*
- Sept. 2016** *IEEE SciVis Contest 2016 Honorable Mention for “Viscous Fingers: A Topological Visual Analytics Approach,” awarded at the IEEE VIS Conference (Lukasczyk, J., Aldrich, G., **Steptoe, M.**, Hamann, B., Maciejewski, R., Leitte, H.)*
- May 2016** *Best Researcher Award: Junior Faculty (2015), School of Computing, Informatics and Decision Systems Engineering, Arizona State University*
- Oct. 2015** *IEEE-VGTC VPC Visualization Contest Award: Communications Impact for “ACT Interest-Major Fit” awarded at IEEE VIS (**Wang, F.**, Maciejewski, R.)*
- Oct. 2015** *VAST Grand Challenge Award: Outstanding Comprehensive Submission for “VADER/VIS-Grand Challenge” awarded at the IEEE Conference on Visual Analytics Science and Technology (**Steptoe, M.**, Krueger, R., **Zhang, Y.**, **Liang, X.**, **Garcia, R.**, **Kadambi, S.**, Ertl, T., Maciejewski, R.)*
- May 2015** *Best Researcher Award: Junior Faculty (2014), School of Computing, Informatics and Decision Systems Engineering, Arizona State University*
- Feb. 2015** *IEEE Senior Member, Institute of Electrical and Electronics Engineers*
- July 2014** *NSF Career Award, U.S. National Science Foundation*
- Oct. 2013** *VAST Mini Challenge 1 Award: Excellent Visual Analysis of Structured and Unstructured Data for “Box Office VAST – Team VADER” awarded at the IEEE Conference on Visual Analytics Science and Technology (**Lu, Y.**, **Wang, F.**, Maciejewski, R.)*

|                 |  |
|-----------------|--|
| <b>May 2013</b> | <i>U.S. Coast Guard Meritorious Team Commendation</i> as a member of the United States Coast Guard Port Resilience for Operational Tactical Enforcement to Combat Terrorism (PROTECT)                      |
| <b>May 2011</b> | <i>Seed for Success</i> , Purdue University, Vice President of Research (\$1M+ grant in AY10-11) awarded for “Development of a Real-Time Infectious Disease Surveillance and Response System for Pakistan” |
| <b>May 2007</b> | <i>HS-STEM Fellowship</i> , Department of Homeland Security  |

## STUDENT HONORS & AWARDS

|                    |   |
|--------------------|---|
| <b>Mar., 2017</b>  | Rolando Garcia, <i>NSF Graduate Research Fellowship Award</i>   |
| <b>Mar., 2017</b>  | Alexandra Porter, <i>NSF Graduate Research Fellowship Award</i>   |
| <b>Dec., 2016</b>  | Alexandra Porter, <i>Computing Research Association Undergraduate Research Award – Finalist</i>           |
| <b>Dec., 2016</b>  | Rolando Garcia, <i>Computing Research Association Undergraduate Research Award – Honorable Mention</i>    |
| <b>March, 2013</b> | Adam J. Fairfield, <i>Computing Research Association Undergraduate Research Award – Honorable Mention</i> |

## RESEARCH SUPPORT

### Principal Investigator

“Center for Accelerating Operational Efficiency,” *Department of Homeland Security*, \$40M, 8/17 – 8/27, Co-PI (ASU only listed): Pitu Mirchandani, Ronald Askin, Huan Liu, Jingrui He, Hanghang Tong, Jorge Sefair, Giulia Pederelli, Gail-Joon Ahn

“Student Travel Support for the Doctoral Colloquium at IEEE VIS 2018,” *National Science Foundation*, \$25,000, 2/18 – 12/18

“REU/CAREER: Visual analytics algorithms for spatiotemporal analysis,” *National Science Foundation*, \$16,000, 8/17 – 7/18

“INFEWS/T2: Flexible Model Compositions and Visual Representations for Planning and Policy Decisions at the Sub-regional level of the food-energy-water nexus,” *National Science Foundation*, \$2.9M, 8/16 – 8/20, Co-PI: Dave White, Giuseppe Mascaro, Rimjhim Aggarwal, Hessam Sarjoughian

“REU/CAREER: Visual analytics algorithms for spatiotemporal analysis,” *National Science Foundation*, \$16,000, 8/16 – 7/17

“CAREER: Visual analytics algorithms for spatiotemporal analysis,” *National Science Foundation*, \$425,000, 4/14 – 4/19

“A visual analytics framework for the global change assessment model,” *Pacific Northwest National Laboratory*, \$176,420, 1/16-12/18

“WDYTYA: Spatiotemporal network dynamics for community detection,” *Department of Homeland Security VACCINE Center of Excellence*, \$191,707, 8/13-8/16

“Improving predictive analytics capability for VALET,” *Department of Homeland Security VACCINE Center of Excellence*, \$130,186, 12/12 – 8/16

### Co-Principal Investigator

“NSF:FAI Towards a Computational Foundation for Fair Network Learning,” *National Science Foundation*, \$585,592, PI: Hanghang Tong (University of Illinois Urbana – Champaign), Co-PI: My Thai (University of Florida), (personal share 30%), 1/2020 – 12/2022.

“Informing Coastal Community Planning and Response to Environmental Change in Regions with Offshore Oil and Gas Operations,” *Gulf Research Program – National Academies*, \$456,000, PI: Tony H. Grubestic, (personal share 50%), 9/15/2016 – 9/14/2018

“Anticipating Effects of Agricultural Trade Networks on Water, Food, and Political Security,” *Skoll Foundation*, \$93,712, PI: Shade Shuttles, (personal share 40%), 3/1/2016 – 2/28/2017

“Foresight Initiative and the new ISR: Interconnectivity, Sustainability, and Resilience,” *National Geospatial Intelligence Agency*, \$4,000,000, PI: Nadya Bliss, (personal share 20%), 6/14 – 10/15

“Development of a Real-Time Infectious Disease Surveillance and Response System for Pakistan: Responding to Human Well-Being in Times of Threat,” *Defense Threat Reduction Agency*, \$1,600,000, PI: Arif Ghafoor, (personal share 5%), 6/10 – 5/13

## PUBLICATIONS

### Peer-reviewed Journal Articles

*Note: Authors who were mentored ASU students at the time of publication are marked in bold.*

1. **Xie, T., Ma, Y.,** Kang, J., Tong, H., Maciejewski, R., “FairRankVis: A Visual Analytics Framework for Exploring Algorithmic Fairness in Graph Mining Models,” *IEEE Transactions on Visualization and Computer Graphics*, (To appear).
2. **Zhang, R., Lu, Y.,** Sefair, S., Acevedo, M., Mellin, H., Maciejewski, R., “A Visual Analytics Framework for Conservation Planning Optimization,” *Environmental Modelling and Software*, (To appear).
3. **Zhang, R., Lukasczyk, J.,** Wang, F., Ebert, D., Shakarian, P., Mack, E.A., Maciejewski, R., “Exploring Geographic Hotspots Using Topological Data Analysis,” *Transactions in GIS*, (To appear).

4. Mack, E.A., Helderop, E., **Ma, K.**, Grubestic, T.H., Mann, J., Loveridge, S., Maciejewski, R., “A Broadband Integrated Time Series (BITS) for Longitudinal Analyses of the Digital Divide,” *PLoS ONE*, (To appear).
5. **Ma, Y.**, **Medini, P.**, Nelson, J., Wei, R., Grubestic, T., Sefair, J., Maciejewski, R., “A Visual Analytics System for Oil Spill Response and Recovery,” *IEEE Computer Graphics & Applications*, (To appear).
6. **Xie, T.**, **Ma, Y.**, Tong, H., Thai, M., Maciejewski, R., “Auditing the Sensitivity of Graph-based Ranking with Visual Analytics,” *IEEE Transactions on Visualization and Computer Graphics*, 27(2): 1459-1469, 2021.
7. **Ma, Y.**, **Fan, A.**, He, J., Nelakurthi, A., Maciejewski, R., “A Visual Analytics Framework for Explaining and Diagnosing Transfer Learning Processes,” *IEEE Transactions on Visualization and Computer Graphics*, 27(2): 1385-1395, 2021.
8. **Lukasczyk, J.**, Garth, C., Maciejewski, R., Tierny, J., “Localized Topological Simplification of Scalar Data,” *IEEE Transactions on Visualization and Computer Graphics*, 27(2): 572-582, 2021.
9. **Ma, Y.**, Maciejewski, R., “Visual Analysis of Class Separations with Locally Linear Segments,” *IEEE Transactions on Visualization and Computer Graphics*, 27(1): 241-253, 2021.
10. Chen, H., **Soni, U.**, **Lu, Y.**, Huroyan, V., Maciejewski, R., Kobourov, S., “Same Stats, Different Graphs: Exploring the Space of Graphs in Terms of Global Graph Properties,” *IEEE Transactions on Visualization and Computer Graphics*, 27(3): 2056-2072, 2021.
11. **Mathis, B.**, **Ma, Y.**, Mancenido, M., Maciejewski, R., “Exploring the Design Space of Sankey Diagrams for the Food-Energy-Water Nexus,” *IEEE Computer Graphics & Applications*, 41(2): 25-34, 2021.
12. Lee, C., Kim, Y., Jin, S., Kim, D., Maciejewski, R., Ebert, D., Ko, S., “An Interactive Visual Analytics System for Exploring, Monitoring, and Forecasting Road Traffic Congestion,” *IEEE Transactions on Visualization and Computer Graphics*, 26(11): 3133-3146, 2020.
13. Huang, Z., **Lu, Y.**, Mack, E. A., Chen, W., Maciejewski, R., “Exploring the Sensitivity of Choropleths Under Attribute Uncertainty,” *IEEE Transactions on Visualization and Computer Graphics*, 26(8): 2576-2590, 2020.
14. Opejin, A. K., Aggarwal, R. M., White, D. D., Jones, J. L., Maciejewski, R., Mascaro, G., Sarjoughian, H. S., “A Bibliometric Analysis of Food-Energy-Water Nexus Literature,” *Sustainability*, 2020.
15. **Ma, Y.**, **Xie, T.**, Li, J., Maciejewski, R., “Explaining Vulnerabilities to Adversarial Machine Learning through Visual Analytics,” *IEEE Transactions on Visualization and Computer Graphics*, 26(1): 1075-1085, 2020.
16. Lukasczyk, J., Garth, C., Weber, G., Biedert, T., Maciejewski, R., Leitte, H., “Dynamic Nested Tracking Graphs,” *IEEE Transactions on Visualization and Computer Graphics*, 26(1): 249 – 258, 2020.
17. Guan, X., Mascaro, G., Sampson, D., Maciejewski, R., “A Metropolitan Scale Water Management Analysis of the Food-Energy-Water Nexus,” *Science of the Total Environment*, 701(20), 2020.
18. Zhang, S., Tong, H., Xu, J., Maciejewski, R., “Graph Convolutional Networks: A Comprehensive Review,” *Computational Social Networks*, 6(1), 11, 2019.
19. Huang, C.-H., Tong, H., He, J., Maciejewski, R., “Location Prediction for Tweets,” *Frontiers in Big Data*, 2(5), 2019.
20. Gillman, C., Post, T., Wischgoll, T., Hagen, H., Maciejewski, R., “Hierarchical Image Semantics Using Probabilistic Path Propagations for Biomedical Research,” *IEEE Computer Graphics and Applications*, 39(6): 86-101, 2019.
21. Middel, A., Lukasczyk, J., Zakrzewski, S., Arnold, M., Maciejewski, R., “Urban Form and Composition of Street Canyons: A Human-Centric Big Data and Deep Learning Approach,” *Landscape and Urban Planning*, 183:122-132, 2019.
22. **Wang, H.**, **Lu, Y.**, **Steptoe, M.**, Landis, S., Shuttters, S., Maciejewski, R., “A Visual Analytics Framework for Spatiotemporal Trade Network Analysis,” *IEEE Transactions on Visualization and Computer Graphics*, 25(1): 331-341, 2019.
23. Gu, T., Zhu, M., Chen, W., Huang, Z., Maciejewski, R., Chang, L., “Structuring Mobility Transition with an Adaptive Graph Representation,” *IEEE Transactions on Computational Social Systems*, 5(4): 1121-1132, 2018.
24. Middel, A., Lukasczyk, J., Demuz, M., Roth, M., Maciejewski, R., “Sky View Factor Footprints for Urban Climate Modeling,” *Urban Climate*, 25:120-134, 2018.
25. **Soni, U.**, **Lu, Y.**, **Hansen, B.**, Purchase, H., Kobourov, S., Maciejewski, R., “The Perception of Graph Properties in Graph Layouts,” *Computer Graphics Forum*, 37(3), 2018.
26. **Lu, Y.**, **Wang, H.**, Landis, S., Maciejewski, R., “A Visual Analytics Framework for Identifying Topic Drivers in Media,” *IEEE Transactions on Visualization and Computer Graphics*, 24(9): 2501-2515, 2018.
27. Chen, W., Huang, Z., Wu, F., Zhu, M., Guan, H., Zhang, F., Maciejewski, R., “VAUD: A Visual Analysis Approach for Exploring Spatio-Temporal Urban Data,” *IEEE Transactions on Visualization and Computer Graphics*, 24(9): 2535-2648, 2018.
28. **Steptoe, M.**, **Garcia, R.**, Krüger, R., Liang, X., Maciejewski, R., “A Visual Analytics Framework for Exploring Theme Park Dynamics,” *ACM Transactions on Interactive Intelligent Systems*, 8(1), 4, 2018.
29. Kim, S., Jeong, S., Woo, I., Jang, Y., Maciejewski, R., Ebert, D. S., “Data Flow Analysis and Visualization for Spatiotemporal Statistical Data without Trajectory Information,” *IEEE Transactions on Visualization and Computer Graphics*, 24(3): 1287-1300, 2018.
30. White, D. D., Jones, J. L., Maciejewski, R., Aggarwal, R., Mascaro, G., “Stakeholder Analysis for the Food-Energy-Water Nexus in Phoenix, Arizona: Implications for Nexus Governance,” *Sustainability*, 9:2204, 2017.

31. Wang, F., Hansen, B., Simmons, R., Maciejewski, R., "The Name Profiler Toolkit," *IEEE Computer Graphics & Applications*, 37(5): 61-71, 2017.
32. Luo, W., Steptoe, M., Zheng, C., Link, R., Clarke, L., Maciejewski, R., "The Impact of Spatial Scales on the Inter-Comparison of Climate Scenarios," *IEEE Computer Graphics & Applications*, 37(5): 40-49, 2017.
33. Andrienko, G., Andrienko, N., Chen, W., Maciejewski, R., Zhao, Y., "Visual Analytics, Movement, and Transportation: State of the Art and Further Research Directions," *IEEE Transactions on Intelligent Transportation Systems*, 18 (8): 2232 – 2249, 2017.
34. Lu, Y., Garcia, R., Hansen, B., Gleicher, M., Maciejewski, R., "The State-of-the-Art in Predictive Visual Analytics," *Computer Graphics Forum*, 36(3): 539-562, 2017.
35. Lukasczyk, J., Maciejewski, R., Garth, C., Weber, G., Leitte, H., "Nested Tracking Graphs," *Computer Graphics Forum*, 36(3): 12-22, 2017 (Best Paper, EuroVis 2017).
36. Middel, A., Lukasczyk, J., Maciejewski, R., "Sky View Factors from Synthetic Fisheye Photos for Thermal Comfort Routing – A Case Study in Phoenix, Arizona," *Urban Planning*, 2(1): 19-30, 2017.
37. Buchanan, V., Lu, Y., McNeese, N., Steptoe, M., Maciejewski, R., Cooke, N., "The Role of Teamwork in the Analysis of Big Data --- A Study of Visual Analytics and Box Office Prediction," *Big Data*, 5(1): 53-66, 2017.
38. Landis, S., Rezaeedyakenari, S., Zhang, Y., Maciejewski, R., Thies, C., "Fording Differences? Conditions Mitigating Water Insecurity in the Niger River Basin," *Political Geography*, 56:77-90, 2017
39. Zhang, Y., Maciejewski, R., "Quantifying the Visual Impact of Classification Boundaries in Choropleth Maps," *IEEE Transactions on Visualization and Computer Graphics*, 23(1): 371-380, 2017.
40. Wang, F., Mack, E.A., Maciejewski, R., "Analyzing Entrepreneurial Social Networks with Big Data," *Annals of the American Association of Geographers*, 107(1): 130-150, 2017.
41. Zhang, Y., Luo, W., Mack, E.A., Maciejewski, R., "Visualizing the Impact of Geographical Variations on Multivariate Clustering," *Computer Graphics Forum*, 35(3): 101-110, 2016.
42. Lu, Y., Steptoe, M., Wang, H., Tsai, J., Burke, S., Davulcu, H., Montgomery, D., Corman, S., Maciejewski, R., "Exploring Evolving Media Discourse Through Event Cueing," *IEEE Transactions on Visualization and Computer Graphics*, 22(1):220-229, 2016.
43. Zhu, B., Zhang, H., Chen, W., Xia, F., Maciejewski, R., "ShotVis: Smartphone-based Visualization of Information from Images," *ACM Transactions on Multimedia Computing, Communications, and Applications (TOMM)*, 12(1s), 2015.
44. Mack, E. A., Maciejewski, R., "A Profile of Visual Analytical Toolkits for Understanding the Spatio-Temporal Evolution of Broadband Provision," *Telecommunications Policy Journal*, 39(3-4):320-332, 2015.
45. Malik, A., Maciejewski, R., McCullough, S., Towers, S., Ebert, D., "Proactive Spatiotemporal Resource Allocation and Predictive Visual Analytics for Community Policing and Law Enforcement," *IEEE Transactions on Visualization and Computer Graphics*, 20(12): 1863-1872, 2014.
46. Lu, Y., Wang, F., Maciejewski, R., "Business Intelligence from Social Media: A Study from the VAST Box-Office Challenge," *IEEE Computer Graphics and Applications*, 34(5): 58-70, 2014.
47. Malik, A., Maciejewski, R., Jang, Y., Oliveros, S., Yang, Y., Maule, B., White, M., Ebert, D. S., "A Visual Analytics Process for Maritime Response, Resource Allocation and Risk Assessment," *Information Visualization*, 13(2): 93-110, 2014.
48. Mack, E. A., Zhang, Y., Rey, S., Maciejewski, R., "Spatio-temporal analysis of industrial composition with IVIID: An Interactive Visual Analytics Interface for Industrial Diversity," *Journal of Geographical Systems*, 16(2): 183-209, 2014.
49. Zhang, Y., Adnan, M., Longley, P., Maciejewski, R., "Exploring Geo-Genealogy Using Internet Surname Search Histories," *Journal of Maps*, 9(4):481-485, 2013.
50. Kim, S., Maciejewski, R., Malik, A., Jang, Y., Ebert, D. S., Isenberg, T., "Bristle Maps: A Multivariate Abstraction Technique for Geovisualization," *IEEE Transactions on Visualization and Computer Graphics*, 19(9): 1438-1454, 2013.
51. Maciejewski, R., Woo, I., Jang, Y., Janicke, H., Gaither, K. P., Ebert, D. S., "Abstracting Attribute Space for Transfer Function Exploration and Design," *IEEE Transactions on Visualization and Computer Graphics*, 19(1): 94-107, 2013.
52. Maciejewski, R., Pattah, A., Ko, S., Hafen, R., Cleveland, W. S., Ebert, D. S., "Automated Box-Cox Transformations for Improved Visual Encoding," *IEEE Transactions on Visualization and Computer Graphics*, 19(1): 130-140, 2013.
53. Afzal, S., Maciejewski, R., Jang, Y., Elmqvist, N., Ebert, D. S., "Spatial Text Visualization Using Automatic Typographic Maps," *IEEE Transactions on Visualization and Computer Graphics*, 18(12): 2556-2564, 2012.
54. Woo, I., Maciejewski, R., Gaither, K. P., Ebert, D. S., "Feature-driven Data Exploration for Volumetric Rendering," *IEEE Transactions on Visualization and Computer Graphics*, 18(10): 1731-1743, 2012.
55. Ko, S., Maciejewski, R., Jang, Y., Ebert, D. "Market Analyzer: An Interactive Visual Analytics System for Analyzing Competitive Advantage Using Point of Sale Data," *Computer Graphics Forum*, 31(3): 1245-1254, 2012.
56. Livengood, P., Maciejewski, R., Chen, W., Ebert, D. "OmicsVis: An Interactive Tool for Visually Analyzing Metabolomics Data," *BioMed Central Bioinformatics*, 13(Suppl 8):S6 2012.

57. Maciejewski, R., Livengood, P., Rudolph, S., Collins, T. F., Ebert, D. S., Brigantic, R. T., Corley, C. D., Muller, G. A., Sanders, S. W., "A Pandemic Modeling and Visualization Tool," *Journal of Visual Languages and Computing*, 22(4):268-278, 2011.
58. Maciejewski, R., Rudolph, S., Hafen, R., Mitchell, M. A., Larew, S. G., Cleveland, W., Ebert, D., "Forecasting Hotspot – A Predictive Analytics Approach," *IEEE Transactions on Visualization and Computer Graphics*, 17(4): 440-453, 2011.
59. Maciejewski, R., Rudolph, S., Hafen, R., Abusalah, A., Yakout, M., Ouzzani, M., Cleveland, W., Grannis, S., Ebert, D., "A Visual Analytics Approach to Understanding Spatiotemporal Hotspots," *IEEE Transactions on Visualization and Computer Graphics*, 16(2): 205-220, 2010.
60. Lu, A., Maciejewski, R., Ebert, D., "Volume Composition and Evaluation Using Eye Tracking Data," *ACM Transactions on Applied Perception*, 7(1): 1-20, January 2010.
61. Maciejewski, R., Chen, W., Woo, I., Ebert, D., "Structuring Feature Space – A Non-Parametric Method for Volumetric Transfer Function Generation," *IEEE Transactions on Visualization and Computer Graphics*, 15(6): 1473-1480, 2009.
62. Song, Y., Chen, W., Maciejewski, R., Gaither, K., Ebert, D., "Bivariate Transfer Functions on Unstructured Grids," *Computer Graphics Forum*, 27(3), June 2009.
63. Woo, I., Kim, S., Maciejewski, R., Ebert, D., Ropp, T., Thomas, K., "SDViz: A Context-Preserving Interactive Visualization System for Technical Diagrams," *Computer Graphics Forum*, 27(3), June 2009.
64. Hafen, R., Anderson, D., Cleveland, W., Maciejewski, R., Ebert, D., Abusalah, A., Yakout, M., Ouzzani, M., Grannis, S., "STL for Modeling, Visualizing, and Monitoring Disease Counts," *BMC Medical Informatics and Decision Making*, 9(21), 2009.
65. Maciejewski, R., Hafen, R., Rudolph, S., Tebbetts, G., Cleveland, W., Grannis, S., Ebert, D., "Generating Synthetic Syndromic Surveillance Data for Evaluating Visual Analytics Techniques," *IEEE Computer Graphics and Applications*, 29(3):18-28, 2009.
66. Mora, B., Maciejewski, R., Chen, M., Ebert, D., "Visualization and Computer Graphics on Isotropically Emissive 3D Displays," *IEEE Transactions on Visualization and Computer Graphics*, 15(2):221-234, 2009.
67. Liang, X., Chen, W., Maciejewski, R., Ebert, D., "Shape Context Preserving Deformation of 2D Anatomical Illustrations," *Computer Graphics Forum*, 28(1):114-126, 2008.
68. Kim, S., Maciejewski, R., Ostmo, K., Delp, E., Collins, T., Ebert, D., "Mobile Analytics for Emergency Response and Training," *Information Visualization*, 7:77-88, 2008.
69. Maciejewski, R., Glickman, N., Moore, G., Zheng, C., Tyner, B., Cleveland, W., Ebert, D., Lance, S., Horan, J., Glickman, L., "Companion Animals as Sentinels for Community-Exposure to Industrial Chemicals: The Fairburn, GA Propyl Mercaptan Case-Study," *Public Health Reports*, 123(3), May/June 2008.
70. Maciejewski, R., Isenberg, T., Andrews, W. M., Ebert, D. S., Sousa, M. C., Chen, W., "Measuring Stipple Aesthetics in Hand-Drawn and Computer-Generated Images," *IEEE Computer Graphics and Applications*, 28(2):62-74, 2008.

#### Peer-reviewed Conference Articles

**Note: Authors who were mentored ASU students at the time of publication are marked in bold.**

1. Kemmer, R., Yoo, Y., Escobedo, A., Maciejewski, R., "Enhancing Collective Estimates by Aggregating Cardinal and Ordinal Inputs," *AAAI Conference on Human Computation and Crowdsourcing*, 2020.
2. Yang, W., Li, Z., Liu, M., Lu, Y., Cao, K., Maciejewski, R., Liu, S., "Diagnosing Concept Drift in Streaming Data," *IEEE Conference on Visual Analytics Science and Technology*, 2020.
3. Kang, J., He, J., Maciejewski, R., Tong, H., "InFoRM: Individual Fairness on Graph Mining," *Knowledge Discovery and Data Mining (KDD)*, 2020.
4. Zhou, Y., Nelakurthi, A., Maciejewski, R., Fan, W., He, J., "Crowd Teaching with Noisy Labels," *The Web Conference (WWW)*, 2020.
5. Zhang, S., Tong, H., Xu, J., Hu, Y., Maciejewski, R., "Origin: Non-Rigid Network Alignment," *IEEE International Conference on Big Data (IEEE Big Data)*, 2019.
6. Zhang, S., Tong, H., Maciejewski, R., Eliassi-Rad, T., "Multilevel Network Alignment," *The Web Conference (WWW)*, pp. 2344-2354, 2019.
7. Nelakurthi, A. R., Maciejewski, R., He, J., "Source Free Adaptation Using an Off-the-Shelf Classifier," *IEEE International Conference on Big Data*, 2018.
8. Zhou, D., Davulcu, H., Maciejewski, R., He, J., "Motif-Preserving Dynamic Local Graph Cut," *IEEE International Conference on Big Data*, 2018.
9. Zhang, S., Tong, H., Xu, J., Maciejewski, R., "Graph Convolutional Networks: Algorithms, Applications and Open Challenges," *IEEE International Conference on Computational Data & Social Networks (CSoNet)*, 2018.
10. Chen, H., **Soni, B., Lu, Y.,** Maciejewski, R., Kobourov, S., "Same Stats, Different Graphs (Graph Statistics and Why We Need Graph Drawings)," *Proceedings of the 26<sup>th</sup> International Symposium on Graph Drawing and Network Visualization*, 2018.
11. Zhang, J., Surakitbanharn, C., Elmqvist, N., Maciejewski, R., Qian, Z., Ebert, D., "TopoText: Context-Preserving Text Data Exploration Across Multiple Scales," *ACM CHI Conference on Human Factors in Computing Systems*, 2018 (Honorable Mention).

12. Gorko, T., Yau, C., Malik, A., Harris, M., Tee, J. X., Maciejewski, R., Qian, C., Afzal, S., Pijanowski, B., Ebert, D., "A Multi-Scale Correlative Approach for Crowd-Sourced Multi-Variate Spatiotemporal Data," *Proceedings of the Hawaii International Conference on System Sciences*, January, 2018.
13. Zhang, J., Malik, A., Ahlbrand, B., Elmqvist, N., Maciejewski, R., Ebert, D., "TopoGroups: Context-Preserving Visual Illustration of Multi-Scale Spatial Aggregates," *ACM CHI Conference on Human Factors in Computing Systems*, 2017.
14. Nelakurthi, A., Tong, H., Maciejewski, R., Bliss, N., He, J., "User-guided Cross-domain Sentiment Classification," *SIAM International Conference on Data Mining*, 2017.
15. Ma, Y., Chen, W., Ma, X., Xu, J., Huang, X., Maciejewski, R., Tung, A., "EasySVM: A Visual Analysis Approach for Open-Box Support Vector Machines," *Computational Visual Media Conference*, 2017.
16. Lukasczyk, J., Maciejewski, R., Garth, C., Hagen, H., "Understanding Hotspots: A Topological Visual Analytics Approach," *ACM SIGSPATIAL International Conference on Advances in Geographic Information Systems*, 2015.
17. Sampson, J., Morstatter, F., Maciejewski, R., Liu, H., "Surpassing the Limit: Keyword Clustering to Improve Twitter Sample Coverage," *ACM Conference on Hypertext and Social Media*, 2015.
18. **Lu, Y.**, Krueger, R., Thom, D., **Wang, F.**, Koch, S., Ertl, T., Maciejewski, R., "Integrating Predictive Analytics and Social Media," *IEEE Conference on Visual Analytics Science and Technology*, 2014.
19. Razip, A. M. M., Malik, A., Afzal, S., Joshi, S., Maciejewski, R., Jang, Y., Elmqvist, N., Ebert, D. S., "A Mobile Visual Analytics Approach for Situational Awareness and Risk Assessment," *IEEE Pacific Visualization Symposium*, 2014.
20. **Fairfield, A.J.**, Plasencia, J., Jang, Y., Theodore, T., Crawford, N. R., Frakes, D. H., Maciejewski, R., "Volume Curtaining: A Focus+Context Effect for Multimodal Volume Visualization," *Proceedings of the SPIE Medical Imaging Conference*, 2014.
21. Wang, Z., Chen, W., Zhou, X., Chen, C., Maciejewski, R., "A Novel Visual Analysis Approach for Clustering Large-Scale Social Data," *Proceedings of the First Workshop on Big Data Visualization at IEEE BigData*, October, 2013.
22. Green, T., Maciejewski, R., "A Role for Reasoning in Visual Analytics," *Proceedings of the Hawaii International Conference on System Sciences*, January, 2013.
23. Chae, J., Thom, D., Bosch, H., Jang, Y., Maciejewski, R., Ebert, D. S., Ertl, T., "Spatiotemporal Social Media Analytics for Abnormal Event Detection Using Seasonal-Trend Decomposition," *IEEE Conference on Visual Analytics Science and Technology (VAST)*, 2012.
24. Malik, A., Maciejewski, R., Jang, Y., Huang, W., Elmqvist, N., Ebert, D. S., "A Correlative Analysis Process in a Visual Analytics Environment," *IEEE Conference on Visual Analytics Science and Technology (VAST)*, 2012.
25. Oliveros, S., Eicher-Miller, H., Boushey, C., Ebert, D., Maciejewski, R., "Applied Visual Analytics for Exploring the National Health and Nutrition Examination Survey," *Proceedings of the Hawaii International Conference on System Sciences*, January, 2012.
26. Afzal, S., Maciejewski, R., Ebert, D., "Visual Analytics Decision Support Environment for Epidemic Modeling and Response Evaluation," *Proceedings of the IEEE Conference on Visual Analytics Science and Technology (VAST)*, 2011.
27. Malik, A., Maciejewski, R., Maule, B., Ebert, D. S., "A Visual Analytics Process for Maritime Resource Allocation and Risk Assessment," *Proceedings of the IEEE Conference on Visual Analytics Science and Technology (VAST)*, 2011.
28. Livengood, P., Maciejewski, R., Chen, W., Ebert, D., "A Visual Analysis System for Metabolomics Data," *Proceedings of the IEEE Symposium on Biological Data Visualization*, 2011.
29. Malik, A., Maciejewski, R., Hodgess, E., Ebert, D., "Describing Temporal Correlation Spatially in a Visual Analytics Environment," *Proceedings of the Hawaii International Conference on System Sciences*, January, 2011.
30. Chae, J., Woo, I., Kim, S., Maciejewski, R., Zhu, F., Delp, E., Boushey, C., Ebert, D., "Volume Estimation Using Food Specific Shape Templates in Mobile Image-Based Dietary Assessment," *IS&T/SPIE Computational Imaging IX, Proceedings of SPIE*, Vol. 7873, January, 2011.
31. Kim, S., Schap, T., Bosch, M., Maciejewski, R., Delp, E., Ebert, D., Boushey, C., "Development of a Mobile User Interface for Image-Based Dietary Assessment," *International Conference on Mobile and Ubiquitous Multimedia (MUM)*, 2010.
32. Malik, A., Maciejewski, R., Collins, T., Ebert, D., T., "Visual Analytics Law Enforcement Toolkit," *IEEE International Conference on Technologies for Homeland Security*, 2010.
33. Kim, S., Woo, I., Maciejewski, R., Ebert, D., Roth, T., Krystal, T., "Evaluating the Effectiveness of Visualization Techniques for Schematic Diagrams in Maintenance Tasks," *Proceedings of the Symposium on Applied Perception in Graphics and Visualization (APGV)*, 2010.
34. Kim, S., Woo, I., Maciejewski, R., Ebert, D., "Automated Hedcut Illustration Using Isophotes," *10<sup>th</sup> International Symposium on Smart Graphics*, 2010.
35. Brigantic, R., Ebert, D., Corley, C., Maciejewski, R., Muller, G., Taylor, A., "Development of a Quick Look Pandemic Influenza Modeling and Visualization Tool," *ISCRAM2010: 7<sup>th</sup> International Conference on Information Systems for Crisis Response and Management*, 2010.

36. Maciejewski, R., Rudolph, S., Drake, T., Malik, A., Ebert, D., "Data Aggregation and Analysis for Cancer Statistics – A Visual Analytics Approach," *Proceedings of the Hawaii International Conference on System Sciences*, 2010.
37. Kim, S., Maciejewski, R., Isenberg, T., Andrews, W., Chen, W., Sousa, M., Ebert, D., "Stippling by Example," *Proceedings of the International Symposium on Non-Photorealistic Animation and Rendering (NPAR)*, 2009.
38. Maciejewski, R., Rudolph, S., Hafen, R., Abusalah, A., Yakout, M., Ouzzani, M., Cleveland, W., Grannis, S., Wade, M., Ebert, D., "Understanding Syndromic Hotspots – A Visual Analytics Approach," *IEEE Symposium on Visual Analytics Science and Technology (VAST)*, pp. 35-42, 2008.
39. Savikhin, A., Maciejewski, R., and Ebert, D., "Applied Visual Analytics for Economic Decision-Making," *IEEE Symposium on Visual Analytics Science and Technology (VAST)*, pp. 107-114, 2008.
40. Maciejewski, R., Kim, S., King-Smith, D., Ostmo, K., Klosterman, N., Mikkilineni, A., Ebert, D., Delp, E., Collins, T., "Situational Awareness and Visual Analytics for Emergency Response and Training," *IEEE International Conference on Technologies for Homeland Security*, 2008.
41. Maciejewski, R., Tyner, B., Jang, Y., Zheng, C., Nehme, R., Ebert, D., Cleveland, W., Ouzzani, M., Grannis, S., Glickman, L., "LAHVA: Linked Animal-Human Health Visual Analytics," *IEEE Symposium on Visual Analytics Science and Technology (VAST)*, pp. 27-34, 2007.
42. Maciejewski, R., Isenberg, T., Andrews, W., Ebert, D., Sousa, M., "Aesthetics of Hand-Drawn vs. Computer-Generated Stippling," *Proceedings of Computational Aesthetics in Graphics, Visualization, and Imaging 2007 (Cae 2007, June 20-22, 2007, Banff, Alberta, Canada)*, Aire-la-Ville, Switzerland, 2007. Eurographics Association.
43. Lu, A., Maciejewski, R., Ebert, D., "Volume Composition Using Eye Tracking Data," *Eurographics-IEEE TCVG Symposium on Visualization 2006*, pp. 115-122, 2006. **CC: 20**
44. Maciejewski, R., Choi, S., Ebert, D., Tan, H., "Multi-Modal Perceptualization of Volumetric Data and Its Application to Molecular Docking," *World Haptics Conference 2005*, pp. 511-514, 2005.

#### Peer-reviewed Short Papers and Extended Abstracts

1. Maciejewski, R., **Ma, Y.**, **Lukasczyk, J.**, "The Visual Analytics and Data Exploration Research Lab at Arizona State University," *Visual Informatics*, (To appear).
2. Kinner, E., **Lukasczyk, J.**, Rogers, D., Maciejewski, R., Garth, C., "Interpolation of Scientific Image Databases," *International Conference on Physical Modeling for Virtual Manufacturing*, 2020.
3. Gillman, C., Saur, D., Wischgoll, T., Hoffmann, K.-T., Hagen, H., Maciejewski, R., Scheuermann, G., "Uncertainty-aware Brain Lesion Visualization," *Eurographics Workshop on Visual Computing for Biology and Medicine*, 2020.
4. **Lukasczyk, J.**, Garth, C., Larsen, M., Engelke, W., Hotz, I., Rogers, D., Ahrens, J., Maciejewski, R., "Cinema Darkroom: A Deferred Rendering Framework for Large-Scale Datasets," *IEEE Symposium on Large Data Analysis and Visualization*, 2020.
5. Lukasczyk, J., Aldrich, G., **Steptoe, M.**, Hamann, B., Maciejewski, R., Leitte, H., "Viscous Fingers: A Topological Visual Analytics Approach," *IEEE SciVis Contest*, 2016.
6. **Liang, X.**, Cherif, A., **Aggarwal, R.**, Mascaro, G., Gummel, A., Maciejewski, R., "Visualizing Malaria Spread Under Climate Variability," *Proceedings of the Workshop on Visualization in Environmental Science at EuroVis*, 2016.
7. Wu, F., Zhu, M., Zhao, X., Wang, Q., Chen, W., Maciejewski, R., "Visualizing the time-varying crowd mobility," *SIGGRAPH Asia – Higher Performance Computing Workshop*, 2015.
8. Whisner, C., **Porter, A.**, Pecor, N., Maciejewski, R., "A Survey of Personal Nutrition in mHealth Apps," *Personal Visualization: Exploring Data in Everyday Life – IEEE VIS Workshop*, 2015.
9. **Steptoe, M.**, Krueger, R., **Zhang, Y.**, **Liang, X.**, **Luo, W.**, **Garcia, R.**, **Kadambi, S.**, Ertl, T., Maciejewski, R., "VADER/VIS VAST 2015 Grand Challenge Entry," *IEEE Conference on Visual Analytics Science and Technology*, October, 2015.
10. Lukasczyk, J., **Liang, X.**, **Luo, W.**, Ragan, E. D., Middel, A., Bliss, N., White, D., Hagen, H., Maciejewski, R., "A Collaborative Web-Based Environmental Data Visualization and Analysis Framework," *Proceedings of the Workshop on Visualization in Environmental Science at EuroVis*, 2015.
11. Lei, T., **Liang, X.**, Mascaro, G., **Luo, W.**, White, D., Westerhoff, P., Maciejewski, R., "An Interactive Web-Based Geovisual Analytics Tool to Explore Water Scarcity in the Niger River Basin," *Proceedings of the Workshop on Visualization in Environmental Science at EuroVis*, 2015.
12. **Luo, W.**, **Chang, Z.**, Kong, L., Link, R., Hejazi, M., Clark, L., Maciejewski, R., "Web Based Visualization of the Global Change Assessment Model," *Proceedings of the Workshop on Visualization in Environmental Science at EuroVis*, 2015.
13. **Lu, Y.**, Hu, X., Wang, F., Kumar, S., Liu, H., Maciejewski, R., "Visualizing Social Media Sentiment in Disaster Scenarios," *The 3rd International Workshop on Social Web for Disaster Management (SWDM'15)*, 2015.
14. **Wang, F.**, **Ibarra, J.**, Adnan, M., Longley, P., Maciejewski, R., "What's In a Name? Data Linkage, Demography and Visual Analytics," *Eurovis Workshop on Visual Analytics*, 2014.
15. **Lu, Y.**, **Wang, F.**, Maciejewski, R., "VAST 2013 Mini-Challenge 1: Box Office VAST - Team VADER," *IEEE Conference on Visual Analytics Science and Technology*, October, 2013.



16. Morstatter, F., Kumar, S., Liu, H., Maciejewski, R., “Understanding Twitter Data with TweetXplorer,” *Proceedings of the 19th ACM SIGKDD International Conference on Knowledge Discovery and Data Mining*, pp. 1482-1485, 2013.
17. Maciejewski, R., Afzal, S., **Farifield, A. J.**, Ghafoor, A., Ebert, D. S., Ahmed, M., Ayyaz, N., “Enabling Syndromic Surveillance in Pakistan,” *In the Abstracts from the 2012 Conference of the International Society of Disease Surveillance*, December 2012.
18. Larew, S. G., Maciejewski, R., Woo, I., Ebert, D., “Spatial Scan Statistics on the GPGPU,” *Proceedings of the Visual Analytics in Healthcare Workshop at the IEEE Visualization Conference*, October, 2010.
19. Malik, A., Afzal, S., Hodgess, E., Ebert, D., Maciejewski, R., “VACCINATED – Visual Analytics for Characterizing a Pandemic Spread,” *Proceedings of the IEEE Conference on Visual Analytics Science and Technology*, October 2010.
20. Green, T., Maciejewski, R., DiPaola, S., “ALIDA: Using Machine Learning for Intent Discernment in Visual Analytics Interfaces,” *Proceedings of IEEE Conference on Visual Analytics Science and Technology*, October 2010.
21. Maciejewski, R., Jang, Y., Ebert, D., Gaither, K., “Abstract Feature Space Representation for Volumetric Transfer Function Exploration,” *Dagstuhl Seminar on Scientific Visualization*, July 2010.
22. Maciejewski, R., Brigantic, R., Muller, G., Collins, T. Ebert, D., “Pandemic Visualization Tool for Risk Analysis,” *2009 Risk Symposium – Risk Analysis of Complex Systems for National Security Applications*, April 2009.
23. Maciejewski, R., Rudolph, S., Grannis, S., and Ebert, D., “The Day-of-the-Week Effect: A Study Across the Indiana Public Health Emergency Surveillance System,” *In the Abstracts from the 2008 Conference of the International Society for Disease Surveillance: Evaluation and Performance*, December 2008.
24. Maciejewski, R., Rudolph, S., Grannis, S., and Ebert, D., “Visual Analytics Toolkit for Evaluating Potential Syndromic Outbreaks,” *In the Abstracts from the 2008 Conference of the International Society for Disease Surveillance*, 2008.
25. Maciejewski, R., Rudolph, S., Tebbetts, G., Ebert, D., “Contextualizing Hotspots – A Visual Analytics Approach,” *Geospatial Visual Analytics Workshop at the GIScience 2008 Conference*, Park City, Utah, USA, 23-26 September, 2008.
26. Anderson, D., Zheng, C., Maciejewski, R., Hafen, R., Cleveland, W., Ebert, D., Ouzzani, M., Grannis, S., “STL and Local Regression for Modeling Disease Surveillance Counts,” *In the Abstracts from the 2007 Conference of the International Society for Disease Surveillance*, December 2007.
27. Pierce, N., Maciejewski, R., Ebert, D., “Visualizing Quantum Dots in a Virtual Environment,” *21<sup>st</sup> National Conference on Undergraduate Research (NCUR)*, April 2007.

#### Book Chapters

1. Kolak, M., **Steptoe, M.**, Manprizio, H., Azu-Popow, L., Hinchy, M., Malana, G., Maciejewski, R., “Extending Volunteered Geographic Information (VGI) with Geospatial Software as a Service: Participatory Asset Mapping Infrastructures for Urban Health,” *Geospatial Technologies for Urban Health*, Springer, 2020.
2. Beigi, G., Hu, X., Maciejewski, R., Liu, H., “An Overview of Sentiment Analysis in Social Media and its Applications in Disaster Relief,” *Sentiment Analysis and Ontology Engineering: An Environment of Computational Intelligence*, Springer, 2016.
3. Maciejewski, R., “Geovisualization,” *Handbook of Regional Science*, Springer, 2013.
4. Maciejewski, R., “Data Representations, Transformations, and Statistics for Visual Reasoning,” *Morgan & Claypool Publishers*, 2011.

#### Conference Tutorial Notes

1. Lee, B., Isenberg, P., Stasko, J., Weiskopf, D., Maciejewski, R. “Beyond Paper Types: How to Evaluate and Communicate VIS Research Contributions,” *IEEE VIS*, October, 2019.
2. Ebert, D., Fisher, B., Green, T., Maciejewski, R., “Fundamentals and Applications of Visual Analytics,” *Hawaiian International Conference on System Science*, January 2012.
3. Ebert, D., Fisher, B., Gaither, K., Kielmann, J., Maciejewski, R., “Fundamentals and Applications of Visual Analytics,” *HICSS 2011*, January 2011.
4. Ebert, D., Ertl, T., Keim, D., Koch, S., Maciejewski, R., Thomas, J., Tversky, B., “Fundamentals of Visual Analytics,” *SIGGRAPH 2010*, July 2010.
5. Ebert, D., Ertl, T., Keim, D., Koch, S., Maciejewski, R., Thomas, J., “Applications of Visual Analytics,” *SIGGRAPH 2010*, July 2010.
6. Ebert, D., Maciejewski, R., “From Foundations to Applications of Visual Analytics,” *20<sup>th</sup> IASTED International Conference on Modeling and Simulation Tutorial Notes*, July 2009.

#### PATENTS

1. Frakes, D., Maciejewski, R., Spano, M., Plaas, D., Van Putten, A., Sansone, J., Mortensen, M., Kirkpatrick, N., Thomas, J., “Real-time medical image visualization systems and related methods,” U.S. Patent 10,643,360 issued on May 5, 2020.
2. Maciejewski, R., Hafen, R., Rudolph, S., Cleveland, W., Ebert, D., “Forecasting hotspots using predictive visual analytics approach,” U. S. Patent 8,924,332 B2 issued on Dec. 30, 2014.



3. Ebert, D. S., Maciejewski, R., Tyner, B., Jang, Y., Cleveland, W., Amass, S., “Animal Symptom Visual Analytics,” U. S. Patent 8,882,664 B2 issued on November 11, 2014.
4. Ebert, D. S., Collins, T., Maciejewski, R., Malik, A., “Visual Analytics Law Enforcement Tools,” U. S. Patent 8,849,728 B2 issued on September 30, 2014.

#### INVITED KEYNOTES

1. Maciejewski, R., “Exploring Spatial Phenomenon with Geovisual Analytics,” *Visualization and Data Analysis*, January, 2021.
2. Maciejewski, R., “Exploring Spatial Phenomenon with Geovisual Analytics,” *ACM SIGSPATIAL*, November, 2020.
3. Maciejewski, R., “Fun with Visualization in the Data Deluge,” *International Symposium on Visual Computing*, October, 2020.
4. Maciejewski, R., “Predictive Visual Analytics: Pitfalls and Potential,” Pacific VAST, April, 2019.
5. Maciejewski, R., “Geographic Analysis and Visualization: Fun in the Data Deluge,” General Motors Geek Week, September, 2018.
6. Maciejewski, R., “Environmental Visualization under the Lens of Saliency, Credibility and Legitimacy,” *Workshop on Visualization in Environmental Science at EuroVis*, June, 2016.

#### INVITED SEMINARS

1. Maciejewski, R., “Visualization, Artificial Intelligence, and Decision Making,” Visual Computing Seminar Series, Brown University, February, 2021.
2. Maciejewski, R., “Visualization, Artificial Intelligence, and Decision Making,” Data Systems and Foundations Seminar, Universidad de Los Andes – Bogota, Colombia, December, 2020.
3. Maciejewski, R., “Visualization, Artificial Intelligence, and Decision Making,” Data Systems and Foundations Seminar, University of California – Berkeley, October, 2020.
4. Maciejewski, R., “Deceptive Visualizations – Avoiding Pitfalls in Design,” Cancer Prevention and Control Research Network Annual Meeting, February, 2019.
5. Maciejewski, R., “Visual Analytics Methods for Spatiotemporal Analysis,” University of Arizona, September, 2017.
6. Maciejewski, R., “Visual Analytics Methods for Spatiotemporal Analysis,” Institute for Visualization and Interactive Systems (VIS), University of Stuttgart, June 2017.
7. Maciejewski, R., “Integrating a Visual Analytics Curriculum Into Your Own Classroom,” Prairie View A&M University, Texas, June 2017.
8. Maciejewski, R., “Integrating a Visual Analytics Curriculum Into Your Own Classroom,” Florida International University, Florida, May 2016.
9. Maciejewski, R., “Enabling Predictive Analytics Through Visualization,” Los Alamos National Laboratory, March 2016.
10. Maciejewski, R., “Visual Analytics Tools for the Global Change Assessment Model,” Joint Global Change Research Institute, College Park, MD, December, 2015.
11. Maciejewski, R., “Enabling Predictive Analytics Through Visualization,” TU Kaiserslautern, July, 2015.
12. Maciejewski, R., “Integrating a Visual Analytics Curriculum Into Your Own Classroom,” Bethune Cookman University, Florida, June 2015.
13. Maciejewski, R., “Open Source Data Collection, Analysis and Visualization,” *National System for Geospatial Intelligence (NSG) Research & Development Forum (NRF)/GRAND*, April 2015.
14. Maciejewski, R., Olshausen, B. and Kherlopian, A. “NGA Operational Challenges Panel: Immersive Intelligence,” Panel at the NGA Academic Research Program Symposium and Workshops, Washington, D.C., September 2014.
15. Maciejewski, R., “Integrating a Visual Analytics Curriculum Into Your Own Classroom,” Morgan State University, Baltimore, MD, July 2014.
16. Maciejewski, R., “Syndromic Surveillance with Emergency Department Chief Complaints,” Arizona State University School of Public Affairs, March, 2014.
17. Maciejewski, R., “Enabling Predictive Analytics Through Visualization,” University of Arizona, January, 2014
18. Maciejewski, R., “Integrating a Visual Analytics Curriculum Into Your Own Classroom,” Jackson State University, Mississippi, July 2013.
19. Maciejewski, R., “Analytical Brushing for Spatiotemporal Analysis,” University College of London, United Kingdom, July, 2013.
20. Maciejewski, R., “Analytical Brushing for Spatiotemporal Analysis,” City College of London, United Kingdom, July, 2013.
21. Maciejewski, R., “An Introduction to Concepts in Visual Analytics,” *Visual Analytics Summer School at Middlesex University*, United Kingdom, July 2013.
22. Maciejewski, R., “Analytical Brushing for Spatiotemporal Analysis,” Computer Graphics and Visualization Summit, King Abdullah University of Science and Technology (KAUST), Saudi Arabia, April, 2013
23. Maciejewski, R., “Classification Development in NHANES,” Arizona State University School of Nutrition and Health

Promotion, January, 2013.

24. Maciejewski, R., “Non-Photorealistic Rendering in Visual Analytics,” Tufts University, September, 2012.
25. Maciejewski, R., “Fundamentals and Applications of Visual Analytics,” Visual Analytics Summer School, Middlesex University, September 2012.
26. Maciejewski, R., “Fundamentals and Applications of Visual Analytics,” Canadian Visual Analytics Summer School, Simon Fraser University, July 2012.
27. Maciejewski, R., “Applications in Geovisual Analytics: Syndromic Surveillance and Crime Mapping,” University College London, Department of Geography, November, 2011.
28. Maciejewski, R., “Applications in Geovisual Analytics: Syndromic Surveillance and Crime Mapping,” Arizona State University School of Geographical Sciences & Urban Planning, September, 2011.
29. Maciejewski, R., “Coordinated Syndromic Surveillance through Visual Analytics,” Pennsylvania State University Center for Infectious Disease Dynamics, April 2011.
30. Maciejewski, R., “Exploring Multivariate Data Through the Application of Visual Analytics,” Arizona State University School of Computing, Informatics and Decision Systems Engineering, April 2011.
31. Ebert, D., Maciejewski, R., “Visual Analytics in Healthcare Applications,” North Carolina Bio-Preparedness Collaborative Webinar, March 2011.
32. Maciejewski, R., “Exploring Multivariate Data Through the Application of Visual Analytics,” Oklahoma State University Department of Computer Science, March 2011.
33. Ebert, D., Maciejewski, R., “From Foundations to Applications of Visual Analytics,” *Visual Analytics Summer School at Middlesex University*, September 2010.
34. Maciejewski, R., “An Introduction to Visual Analytics,” University of Illinois Urbana-Champaign Data Sciences Summer Institute, July 2010.
35. Maciejewski, R., Gates, C., Chaturvedi, A., “The Visualization of Security,” The Center for Education and Research in Information Assurance and Security (CERIAS) Annual Information Security Symposium, March 2010.
36. Ebert, D., Maciejewski, R., “Public Health Data Exploration, Analysis, Modeling and Prediction Using Visual Analytics,” United States Department of Health and Human Services, January 2010.
37. Ebert, D., Maciejewski, R., “Data Modeling and Exploration Using Visual Analytics,” National Defense University, October 2009.
38. Maciejewski, R., “Exploring Multivariate Data Through the Application of Visual Analytics,” Pacific Northwest National Laboratory, April 2011.
39. Maciejewski, R., Görg, C., Tomaszewski, B., “Student Research in Visual Analytics for a Safer Nation,” DHS 2009 University Network Summit, March 2009.
40. Ebert, D., Maciejewski, R., “PURVAC Health Analytics and Visualization Overview,” Center for Disease Control Webinar, August 2008.
41. Amass, S., Maciejewski, R., “Swine Disease, Analysis and Impact,” World Pork Exposition, June 2007.
42. Maciejewski, R., “Linked Animal Human Health Visual Analytics,” IBM's Graphics and Visualization Student Symposium, 2007.

## EXTERNAL SERVICE

### Organizing Member

|                       |  |
|-----------------------|--|
| <b>2020 – present</b> | <i>Member, Visualization Executive Committee</i>                                       |
| <b>2020</b>           | <i>Paper Co-Chair, IEEE VAST, IEEE VIS Organizing Committee Member</i>                 |
| <b>2019</b>           | <i>Paper Co-Chair, IEEE VAST, IEEE VIS Organizing Committee Member</i>                 |
| <b>2019</b>           | <i>Paper Co-Chair, IEEE PacificVis</i>   |
| <b>2018</b>           | <i>Doctoral Colloquium Co-Chair, IEEE VIS Organizing Committee Member</i>              |
| <b>2017</b>           | <i>Vice Chair, IEEE VIS</i>  |
| <b>2016</b>           | <i>Paper Co-Chair, IEEE Symposium on Large Data Analysis and Visualization</i>         |
| <b>2014, 2016</b>     | <i>State-of-the-Art Report Co-Chair, IEEE/VGTC EuroVis Organizing Committee Member</i> |
| <b>2015</b>           | <i>Posters Co-Chair, IEEE/VGTC EuroVis Organizing Committee Member</i>                 |
| <b>2015</b>           | <i>Workshops Co-Chair, IEEE Conference on Visual Analytics Science and Technology</i>  |
| <b>2012-2013</b>      | <i>Posters Co-Chair, IEEE Conference on Visual Analytics Science and Technology</i>    |

### Program Committee Member

|                                       |  |
|---------------------------------------|--|
| <b>2010-2012,</b><br><b>2015-2017</b> | IEEE Conference on Visual Analytics Science and Technology   |
| <b>2012-2014, 2018</b>                | IEEE InfoVis   |
| <b>2012-2014,</b><br><b>2017-2019</b> | IEEE/VGTC EuroVis  |
| <b>2009,</b><br><b>2011-2016</b>      | Expressive (The joint symposium on Computational Aesthetics, Sketch-Based Interfaces and Modeling, and Non Photorealistic Animation and Rendering) |
| <b>2014-2015</b>                      | IEEE Symposium on Large Data Analysis and Visualization  |
| <b>2012-2015</b>                      | International Conference on Information Visualization Theory and Applications  |

2017 IEEE/VGTC EuroVAST  
 2012-2014, 2017 IEEE/VGTC EuroVis Short Papers  
 2014 IEEE Joint Intelligence and Security Informatics Conference

#### Workshop Organization

2014 Perer, A., Bertini, E., Maciejewski, R., Sun, J. (Organizers), “IEEE VIS 2014 Workshop on Visualization for Predictive Analytics”

#### Journal Editing

2019 – present Associate Editor, *IEEE Transactions on Visualization and Computer Graphics*  
 2017 Guest Associate Editor (Co-Editors B. Hentschel, Hans Hagen, Miriah Meyer), *IEEE Computer Graphics & Applications*, Special Issue on Applied Visualization  
 2016 Guest Associate Editor (Co-Editors W. Chen, G. Andrienko, N. Andrienko, Y. Zhao), *IEEE Transactions on Intelligent Transportation Systems*, Special Issue on Visual Analytics for Intelligent Transportation Systems  
 2016 Guest Associate Editor (Co-Editors E. Bertini, A. Perer), *Big Data*, Special Issue on Visualization in Data Science  
 2015 Guest Associate Editor, *Computer Graphics Forum*, EuroVis State of the Art Reports

#### Journal Reviewing (Journals for which I consistently perform reviews)

IEEE Transactions on Visualization and Computer Graphics; IEEE Computer Graphics & Applications

#### Conference Reviewing (Conferences for which I consistently perform reviews)

IEEE VIS; IEEE/VGTC EuroVis; Expressive; Hawaii International Conference on System Sciences (HICSS); IEEE PacificVis

#### Proposal Review Service

2013-2020 National Science Foundation

### TEACHING EXPERIENCE

#### Arizona State University (Score provided is “Instructor Score” out of 5.0)

|             |  |              |                               |
|-------------|--|--------------|-------------------------------|
| Fall 2019   | “Intro to Undergraduate Research,” FSE 294 | 16 students  | Evaluation Score: <b>4.58</b> |
| Fall 2018   | “Intro to Undergraduate Research,” FSE 294 | 12 students  | Evaluation Score: <b>4.86</b> |
| Fall 2017   | “Intro to Undergraduate Research,” FSE 294 | 6 students   | Evaluation Score: <b>4.78</b> |
| Spring 2017 | “Data Visualization,” CSE 578              | 117 students | Evaluation Score: <b>3.98</b> |
| Fall 2016   | “Intro to Data Mining,” CSE 491            | 38 students  | Evaluation Score: <b>4.67</b> |
| Fall 2016   | “Intro to Undergraduate Research,” FSE 294 | 9 students   | Evaluation Score: <b>4.76</b> |
| Fall 2015   | “Intro to Undergraduate Research,” FSE 294 | 29 students  | Evaluation Score: <b>4.86</b> |
| Fall 2015   | “Computer Graphics,” CSE 470/598           | 28 students  | Evaluation Score: <b>4.70</b> |
| Fall 2014   | “Intro to Undergraduate Research,” FSE 294 | 10 students  | Evaluation Score: <b>4.57</b> |
| Fall 2014   | “Freshman Engineering,” ASU 101            | 37 students  | Evaluation Score: <b>4.45</b> |
| Fall 2014   | “Computer Graphics,” CSE 470/598           | 30 students  | Evaluation Score: <b>4.49</b> |
| Spring 2014 | “Data Visualization,” CSE 591              | 23 students  | Evaluation Score: <b>4.67</b> |
| Fall 2013   | “Intro to Undergraduate Research,” FSE 294 | 6 students   | Evaluation Score: <b>4.39</b> |
| Fall 2013   | “Freshman Engineering,” ASU 101            | 38 students  | Evaluation Score: <b>4.79</b> |
| Fall 2013   | “Computer Graphics,” CSE 470/598           | 44 students  | Evaluation Score: <b>4.39</b> |
| Spring 2013 | “Data Visualization,” CSE 591              | 16 students  | Evaluation Score: <b>4.70</b> |
| Fall 2012   | “Freshman Engineering,” ASU 101            | 38 students  | Evaluation Score: <b>4.62</b> |
| Fall 2012   | “Computer Graphics,” CSE 470/598           | 44 students  | Evaluation Score: <b>4.52</b> |
| Spring 2012 | “Data Visualization,” CSE 591              | 24 students  | Evaluation Score: <b>4.46</b> |
| Fall 2011   | “Computer Graphics,” CSE 470/598           | 20 students  | Evaluation Score: <b>4.30</b> |

### MENTORING

#### Postdoctoral Students

Wei Luo (2014-2015); Yafeng Lu (2017 – 2018; First Job at Bloomberg); Yuxin Ma (2018 – present); Jonas Lukasczyk (2019 – 2021); Jieqiong Zhao (2020 – present)

#### PhD Students

Yifan Zhang (2011 - May 2016; Thesis: Visual Analytics for Spatiotemporal Cluster Analysis; First Job at ESRI); Yafeng Lu (2012 – May, 2017; Thesis: Methodologies in Predictive Visual Analytics); Feng Wang (2012 – May 2017; Thesis: Visual Analytics for Networked Based Geographical Phenomena; First Job at GE Research); Hong Wang (2014 – 2019; Thesis: Visual Analytics Methodologies in Causality Analysis; First Job at Uber); Rui Zhang (2017 – present); Tiankai Xie (2018 – present); Fan Lei (2019 – present); Arlen Fan (2019 – present); Yixuan Wang (2021 – present); Varun Srivastava (2021 – present)

#### Masters Students (Thesis)

Jingxian Ma (2011 – 2012; Thesis: Multimodal Data Fusion as a Predictor of Missing Information in Social Networks; First Job at InfoSol); Thomas Hayden (2013 – 2014; Thesis: Cluster Metrics and Temporal Coherency in Pixel Based Matrices; First Job at Edgenuity); Bi Wu (2011 – 2012; Thesis: Cascading CurtainMap: An Interactive Visualization for Depicting Large and Flexible Hierarchies; First Job at Pay Pal); Zheng Chang (2014 – 2015; Thesis: Visual Analytics Tool for the Global Change Assessment Model; First Job at MathWorks); Michael Steptoe (2014 – 2017; Thesis: Visual Event Cueing in Linked Spatiotemporal Data; Converted to PhD Program); Xing Liang (2014 – 2016; Thesis: Visualizing Numerical Uncertainties in Climate Ensembles; First Job at Amazon); Travis Seville (2016 – 2017; Thesis: A Visual Analytics Process for Exploring Risk and Vulnerability in International Food Trade Networks; First Job at SRP); Utkarsh Soni (2016 – 2018; Thesis: The Perception of Graph Properties in Graph Layouts; Converted to PhD Program); Prannoy Chandra Pydi Medini (2017 – 2018; Thesis: A Spatial Decision Support System for Oil Spill Response and Recover; First Job at Goldman Sachs); Brandon Mathis (2018 – 2019; Thesis: Visualizing Network Structures in the Food, Energy, and Water Nexus; First Job at Oak Ridge National Laboratory); Benjamin Clayton (2018 – 2019; Thesis: The Impact of Graph Layouts on the Perception of Graph Properties); Rostyslav Hnatyshyn (2020 – present; Thesis: TBD)

#### Thesis Committee Member

**PhD:** Elham Shaabani (Computer Science Ph.D., 2019), Isaac Jones (Computer Science Ph.D., ongoing), Arun Reddy (Computer Science Ph.D., 2019), Hu Shao (Geography, Ph.D., 2018), Xuetao Yin (Computer Science Ph.D., 2018), Victor Girotto (Computer Science Ph.D., 2018), Marynia Kolak (Geography, Ph.D., 2018), Saud Alashri (Computer Science Ph.D., 2018), Bardh Hoxha (Computer Science Ph.D., 2017), Shehzad Afzal (Purdue University, 2017), Shamanth Kumar (Computer Science Ph.D., 2015), Fan Bao (Computer Science Ph. D., 2014), Chi-Han Peng (Computer Science Ph. D., 2014), Anshuman Sahu (Industrial Engineering Ph. D., 2013), Ayan Banerjee (Computer Science Ph.D., 2012), Anirudh Kondaveeti (Computer Science Ph.D., 2012), Xun Li (Geography Ph.D., 2012), Abish Malik (Purdue University, 2014), Insoo Woo (Purdue University, 2012)

**Masters:** William Boyd (Computer Science MS, 2019), Anique Tahir (Computer Science MS, 2018), Shilpa Nagendar (Computer Science MS, 2017), Verica Buchanan (Human Systems Engineering MS, 2016), Jaeyul Shin (Computer Science MS, 2016), Bolun Li (Computer Science MS, 2014), Savitha Sundaramoorthi (Computer Science MS, 2014), Duyan Ta (Computer Science MS, 2013), Liang Xu (Computer Science MS, 2013), Kunal Khanna (Computer Science MS, 2012), Gustavo Figueroa (Computer Science MS, 2012), Sylvia Oliveros (Purdue University, 2013)

#### Undergraduate Students

**ASU Fulton Undergraduate Research Initiative:** Adam Fairfield (2011-2013); Jose Ibarra (2013-2014); Michael Steptoe (2013-2014); Daniel Martin (2014-2015); Alexandra Porter (2014); Sagarika Kadambi (2015-2017); Rolando Garcia (2015-2017); Ryan Kemmer (2019 – 2020); Maya Muir (2021 - 2022)

**Barrett Honors College Dissertation Advisor:** Jose Ibarra (2014); Sagarika Kadambi (2017); Brett Hansen (2017); Maya Muir (2021 - 2022)

**Undergraduate Research Assistantship:** Christopher Kyle (2015); Sergio Felix (2015); Brett Hansen (2016-2017); Ryan Simmons (2016); Cecilia Nguyen (2017- 2018); Olu Gbatedo (2018 – present)

**Barrett Honors College Committee Member:** Kaan Aksoy (2019); McKinsey Chartier (2015); Allen Hsia (2014); Jordan Nguyen (2014); Anurag Kamasamudram (2012)

#### DEPARTMENT, SCHOOL AND UNIVERSITY SERVICE

##### Arizona State University

|                       |  |
|-----------------------|--|
| <b>Fall 2020</b>      | <i>Personnel Committee Chair, School of Computing, Informatics and Decision Systems Engineering</i>  |
| <b>2019 - present</b> | <i>Diversity and Inclusion Task Force Initiative, Fulton Schools of Engineering</i>  |
| <b>Spring 2020</b>    | <i>Personnel Committee Chair, School of Computing, Informatics and Decision Systems Engineering</i>  |
| <b>2019 - present</b> | <i>Personnel Committee Member, School of Computing, Informatics and Decision Systems Engineering</i>   |
| <b>2019 – 2020</b>    | <i>Search Committee Member, Data Driven Decision Making Faculty Search – School of Computing, Informatics and Decision Systems Engineering</i> |
| <b>2018 – 2020</b>    | <i>Search Committee Member, Computer Science and Biodesign Institute – Fulton Schools of Engineering</i>                                       |
| <b>2016 - 2019</b>    | <i>Undergraduate Program Committee Chair, School of Computing, Informatics and Decision Systems Engineering</i>                                |
| <b>2016 – 2018</b>    | <i>Search Committee Chair, Graphics and Visualization Faculty Search – School of Computing, Informatics and Decision Systems Engineering</i>   |
| <b>2015 - 2016</b>    | <i>Search Committee Member, Director Search – School of Computing, Informatics and Decision Systems Engineering</i>                            |
| <b>2015 - 2016</b>    | <i>Search Committee Member, Graphics, Imaging and Vision Search - School of Computing, Informatics and Decision Systems Engineering</i>        |

|                    |   |
|--------------------|---|
| <b>2015 - 2016</b> | <i>Undergraduate Program Committee Member, School of Computing, Informatics and Decision Systems Engineering</i>            |
| <b>2012 – 2015</b> | <i>New Faculty Cohort Committee, Fulton Schools of Engineering</i>  |
| <b>2011 - 2015</b> | <i>Graduate Admissions Committee, School of Computing, Informatics and Decision Systems Engineering</i>                     |
| <b>2014 - 2015</b> | <i>Search Committee Chair, Big Data Faculty Search - School of Computing, Informatics and Decision Systems Engineering</i>  |
| <b>2012 - 2014</b> | <i>Search Committee Member, Big Data Faculty Search - School of Computing, Informatics and Decision Systems Engineering</i> |