

ROXANA BUJACK

Data Science at Scale Team
Information Sciences Group CCS-3
Los Alamos National Laboratory

(505) 667-4424
bujack@lanl.gov
sites.google.com/site/roxanabujack

RESEARCH EXPERIENCE

07/2016 - present	Staff Scientist, Data Science at Scale Team, Los Alamos National Laboratory
01/2016 - 07/2016	Postdoctoral Research Associate, Department of Computer Science, Technical University Kaiserslautern
01/2015 - 12/2015	Postdoctoral Research Associate, Department of Computer Science, University of California, Davis
10/2010 - 12/2014	Doctoral Research Associate, Department of Computer Science, Leipzig University

EDUCATION

12/2014	Ph.D. Computer Science, Leipzig University
03/2011	B.Sc. Computer Science, Leipzig University
07/2010	Diplom (German M.Sc.) Mathematics, Leipzig University

HONORS

05/2020	Best Paper Award: EGPGV 2020
06/2019	Best Paper Award: TopoInVis 2019
06/2016	Best Short Paper Award: EuroVis 2016
12/2014	Ph.D. with Honors “summa cum laude”, Leipzig University
11/2014	Honorable Mention: IEEE VIS 2014 Poster Session
03/2014	Best Paper Award: IEEE PacificVis 2014

GRANTS

12/2019	Principal Investigator “Automatic Colormap Improvement in non-Euclidean Spaces” Laboratory Directed Research and Development (LDRD) program of Los Alamos National Laboratory under project number 20200512ECR: Project management, student mentorship, development of theory and algorithms for smooth interpolation in bent color spaces.
10/2018	Principal Investigator “Objective Flow Topology” Laboratory Directed Research and Development (LDRD) program of Los Alamos National Laboratory under project number 20190143ER: Project management, postdoctoral mentorship, development of theory and algorithms for reference frame invariant feature extraction in flow fields.

10/2016

Co-Investigator “Algorithms and Infrastructure for In Situ Visualization and Analysis (ALPINE)” of the Exascale Computing Project (ECP): Developing theory, implementing algorithms and running experiments for scalable, in-situ pattern detection on exascale proxy architectures, e.g. leveraging data distributed GPUs on ORNL’s Summit.

SKILLS & INTERESTS

Languages	Native fluency: German; Professional fluency: English; Working proficiency: Spanish, Russian
Technical skills	C/C++, Python, Java, LaTeX, Git, Maple, ParaView, VTK, MPI, CMake, JavaScript, HTML, OSX, UNIX/Linux
Research interests	Visualization, flow fields, data science, sustainability, communication of science to broad audiences, feature detection, pattern recognition, moment invariants, HPC, massive data analysis, Lagrangian flow representations, color theory, visualization in the environmental sciences

PUBLICATIONS

- 2021 [49] P. Nardini, M. Chen, M. Böttinger, G. Scheuermann, and R. Bujack. Automatic Improvement of Continuous Colormaps in Euclidean Colorspaces. *Computer Graphics Forum*, 40(3), 2021
- 2020 [48] P. Nardini, M. Chen, R. Bujack, M. Böttinger, and G. Scheuermann. A testing environment for continuous colormaps. *arXiv preprint arXiv:2009.13133*, 2020
- [47] R. Bujack, L. Yan, I. Hotz, C. Garth, and B. Wang. State of the Art in Time-Dependent Flow Topology: Interpreting Physical Meaningfulness Through Mathematical Properties. *Computer Graphics Forum*, 2020
- [46] S. Sane, R. Bujack, C. Garth, and H. Childs. A Survey of Seed Placement and Streamline Selection Techniques. *Computer Graphics Forum*, 2020
- [45] I. Hotz, R. Bujack, C. Garth, and B. Wang. Mathematical foundations in visualization. In M. Chen, H. Hauser, P. Rheingans, and G. Scheuermann, editors, *Foundations of Data Visualization*. Springer, 2020
- [44] K. C. Tsai, R. Bujack, B. Geveci, U. Ayachit, and J. Ahrens. Approaches for In Situ Computation of Moments in a Data-Parallel Environment. In S. Frey, J. Huang, and F. Sadlo, editors, *Eurographics Symposium on Parallel Graphics and Visualization*. The Eurographics Association, 2020, awarded best paper
- [43] R. Bujack and A. Middel. State of the Art in Flow Visualization in the Environmental Sciences. *Environmental Earth Sciences*, 79(2):1–10, 2020
- 2019 [42] P. Nardini, M. Chen, F. Samsel, R. Bujack, M. Böttinger, and G. Scheuermann. The making of continuous colormaps. *IEEE Transactions on Visualization and Computer Graphics*, 2019

- [41] R. Bujack, S. Dutta, D. Zhang, and T. Günther. Objective Finite-Time Flow Topology from Flowmap Expansion and Contraction. In *Topology-Based Methods in Visualization (TopoInVis 2019) Nyköping, Sweden, 2019*, awarded best paper
- [40] R. Bujack, S. Dutta, I. Baeza Rojo, D. Zhang, and T. Günther. Objective Finite-Time Saddles and their Connection to FTLE. In J. Johansson, F. Sadlo, and G. E. Marai, editors, *EuroVis 2019 - Short Papers*, pages 49–53. The Eurographics Association, 2019
- [39] S. Sane, H. Childs, and R. Bujack. An Interpolation Scheme for VDVP Lagrangian Basis Flows. In *Eurographics Symposium on Parallel Graphics and Visualization (EGPGV)*, pages 109–118, Porto, Portugal, June 2019
- [38] S. Dutta, R. X. Brady, M. E. Maltrud, P. J. Wolfram, and R. Bujack. Leveraging Lagrangian Analysis for Discriminating Nutrient Origins. In R. Bujack, K. Feige, K. Rink, and D. Zeckzer, editors, *Workshop on Visualisation in Environmental Sciences (EnvirVis)*. The Eurographics Association, 2019
- [37] F. Samsel, P. Wolfram, A. Bares, T. L. Turton, and R. Bujack. Colormapping resources and strategies for organized intuitive environmental visualization. *Environmental Earth Sciences*, 78(9):269, 2019
- 2018
- [36] M. Zeyen, T. Post, a. A. Hans Hagen, D. Rogers, and R. Bujack. Color Interpolation for Non-Euclidean Color Spaces. In *IEEE Scientific Visualization Conference (SciVis) Short Papers*. IEEE, 2018
- [35] R. Bujack, T. L. Turton, D. Rogers, and J. Ahrens. Ordering Perceptions about Perceptual Order. In *IEEE Scientific Visualization Conference (SciVis) Short Papers*. IEEE, 2018
- [34] R. Bujack, D. Rogers, and J. Ahrens. Reducing Occlusion in Cinema Databases through Feature-Centric Visualizations. In *Leipzig Symposium on Visualization In Applications (LEVIA)*, 2018
- [33] S. Sane, R. Bujack, and H. Childs. Revisiting the Evaluation of In Situ Lagrangian Analysis. In H. Childs and F. Cucchietti, editors, *Eurographics Symposium on Parallel Graphics and Visualization*. The Eurographics Association, 2018
- [32] C. Ware, T. L. Turton, R. Bujack, F. Samsel, P. Shrivastava, and D. H. Rogers. Measuring and modeling the feature detection threshold functions of colormaps. *IEEE transactions on visualization and computer graphics*, 2018
- 2017
- [31] R. Bujack, T. L. Turton, F. Samsel, C. Ware, D. H. Rogers, and J. Ahrens. The good, the bad, and the ugly: A theoretical framework for the assessment of continuous colormaps. *IEEE transactions on visualization and computer graphics*, 24(1):923–933, 2018

- [30] B. Yang, J. Kostkova, J. Flusser, T. Suk, and R. Bujack. Recognition of Patterns in Vector Fields by Gaussian-Hermite Invariants. In *poster at 2017 IEEE International Conference on Image Processing, ICIP, Beijing, China*, 2017
- [29] B. Yang, J. Kostkova, J. Flusser, T. Suk, and R. Bujack. Rotation Invariants of Vector Fields from Orthogonal Moments. *Pattern Recognition*, pages 110–121, 2018
- [28] C. Ware, T. L. Turton, F. Samsel, R. Bujack, and D. H. Rogers. Evaluating the Perceptual Uniformity of Color Sequences for Feature Discrimination. In K. Lawonn, N. Smit, and D. Cunningham, editors, *EuroVis Workshop on Reproducibility, Verification, and Validation in Visualization (EuroRV3)*, pages 7–11. The Eurographics Association, 2017
- [27] C. Ware, T. L. Turton, F. Samsel, R. Bujack, D. H. Rogers, K. Lawonn, N. Smit, and D. Cunningham. Evaluating the perceptual uniformity of color sequences for feature discrimination. In *EuroVis Workshop on Reproducibility, Verification, and Validation in Visualization (EuroRV3)*. The Eurographics Association, 2017
- [26] F. Samsel, T. L. Turton, P. Wolfram, and R. Bujack. Intuitive Colormaps for Environmental Visualization. In R. Bujack, A. Middel, K. Rink, and D. Zeckzer, editors, *Workshop on Visualisation in Environmental Sciences (EnvirVis)*, pages 55–59. The Eurographics Association, 2017
- [25] R. Bujack and J. Flusser. Flexible moment invariant bases for 2d scalar and vector fields. In *Proceedings of International Conference in Central Europe on Computer Graphics, Visualization and Computer Vision (WSCG)*, pages 11–20, 2017
- [24] B. Wang, R. Bujack, H. B. Paul Rosen, Primoz Skraba, and H. Hagen. Interpreting galilean invariant vector field analysis via extended robustness. In *Topology-Based Methods in Visualization (TopoInVis 2017) Tokyo, Japan*, 2017
- [23] R. Bujack and H. Hagen. Moment Invariants for Multi-Dimensional Data. In E. Ozerslan, T. Schultz, and I. Hotz, editors, *Modelling, Analysis, and Visualization of Anisotropy*, *Mathematica and Visualization*. Springer Basel AG, 2017
- 2016
- [22] R. Bujack and A. Middel. Strategic Initiatives for Flow Visualization in Environmental Sciences. In K. Rink, A. Middel, and D. Zeckzer, editors, *Workshop on Visualisation in Environmental Sciences (EnvirVis)*, pages 23–27. The Eurographics Association, 2016
- [21] M. Hummel, R. Bujack, K. I. Joy, and C. Garth. Error Estimates for Lagrangian Flow Field Representations. In E. Bertini, N. Elmqvist, and T. Wischgoll, editors, *EuroVis 2016 - Short Papers*, pages 7–11. The Eurographics Association, 2016, awarded best short paper

- [20] J. Chandler, R. Bujack, and K. I. Joy. Analysis of Error in Interpolation-Based Pathline Tracing. In E. Bertini, N. Elmqvist, and T. Wischgoll, editors, *EuroVis 2016 - Short Papers*, pages 1–5. The Eurographics Association, 2016
- [19] R. Bujack, M. Hlawitschka, and K. I. Joy. Topology-Inspired Galilean Invariant Vector Field Analysis. In *Proceedings of the IEEE Pacific Visualization Symposium, PacificVis 2016 in Taipei, Taiwan*, pages 72–79, 2016
- 2015
- [18] R. Bujack and K. I. Joy. Lagrangian Representations of Flow Fields with Parameter Curves. In *Large Data Analysis and Visualization (LDAV), 2015 IEEE 4th Symposium on*. IEEE, 2015
- [17] R. Bujack, G. Scheuermann, and E. Hitzer. Demystification of the Geometric Fourier Transforms and Resulting Convolution Theorems. *Mathematical Methods in the Applied Sciences*, 2015
- [16] R. Bujack, J. Kasten, V. Natarajan, G. Scheuermann, and K. I. Joy. Clustering Moment Invariants to Identify Similarity within 2D Flow Fields. In E. Bertini, J. Kennedy, and E. Puppo, editors, *Eurographics Conference on Visualization (EuroVis) - Short Papers*, pages 31–35. The Eurographics Association, 2015
- [15] R. Bujack, I. Hotz, G. Scheuermann, and E. Hitzer. Moment Invariants for 2D Flow Fields via Normalization in Detail. *IEEE Transactions on Visualization and Computer Graphics (TVCG)*, 21(8):916–929, Aug 2015
- [14] R. Bujack, J. Kasten, I. Hotz, G. Scheuermann, and E. Hitzer. Moment Invariants for 3D Flow Fields via Normalization. In *IEEE Pacific Visualization Symposium, PacificVis 2015 in Hangzhou, China*, 2015
- 2014
- [13] R. Bujack. *Orientation Invariant Pattern Detection in Vector Fields with Clifford Algebra and Moment Invariants*. PhD Dissertation, Department of Computer Science, Leipzig University, Germany, 2014
- [12] R. Bujack, J. Kasten, I. Hotz, G. Scheuermann, and E. Hitzer. Moment Invariants for 3D Flow Fields. In *poster at IEEE VIS 2014 in Paris, France*, 2014, awarded with an honorable mention
- [11] R. Bujack, M. Hlawitschka, G. Scheuermann, and E. Hitzer. Customized TRS Invariants for 2D Vector Fields via Moment Normalization. *Pattern Recognition Letters*, 46:59, 2014
- [10] R. Bujack, I. Hotz, G. Scheuermann, and E. Hitzer. Moment Invariants for 2D Flow Fields Using Normalization. In *IEEE Pacific Visualization Symposium, PacificVis 2014 in Yokohama, Japan*, pages 41–48, 2014, awarded best paper
- 2013
- [9] R. Bujack, G. Scheuermann, and E. Hitzer. Demystification of the Geometric Fourier Transforms. *AIP Conference Proceedings*, 1558, 2013

- [8] R. Bujack, G. Scheuermann, and E. Hitzer. Detection of Outer Rotations on 3D-Vector Fields with Iterative Geometric Correlation and its Efficiency. *Advances in Applied Clifford Algebras*, pages 1–19, 2013
- [7] E. Hitzer, R. Bujack, and G. Scheuermann. Vector Field Computations in Clifford’s Geometric Algebra. *Third SICE Symposium on Computational Intelligence, 2013, Osaka University*, 2013
- [6] R. Bujack, G. Scheuermann, and E. Hitzer. A General Geometric Fourier Transform. In E. Hitzer and S. J. Sangwine, editors, *Quaternion and Clifford Fourier Transforms and Wavelets*, Trends in Mathematics, pages 155–176. Springer Basel, 2013
- [5] R. Bujack, H. De Bie, N. De Schepper, and G. Scheuermann. Convolution Products for Hypercomplex Fourier Transforms. *Journal of Mathematical Imaging and Vision*, pages 1–19, 2013
- [4] R. Bujack, G. Scheuermann, and E. Hitzer. A General Geometric Fourier Transform Convolution Theorem. *Advances in Applied Clifford Algebras*, 23(1):15–38, 2013
- 2012
- [3] R. Bujack, G. Scheuermann, and E. Hitzer. Detection of Total Rotations on linear 2D-Vector Fields with Iterative Geometric Correlation. *AIP Conference Proceedings*, 1493:190–199, 2012
- [2] R. Bujack, G. Scheuermann, and E. Hitzer. Detection of Outer Rotations on 3D-Vector Fields with Iterative Geometric Correlation. *5th conference on Applied Geometric Algebras in Computer Science and Engineering*, 2012
- 2011
- [1] R. Bujack, G. Scheuermann, and E. Hitzer. A General Geometric Fourier Transform. In K. Gürlebeck, editor, *Proceedings of the 9th International Conference on Clifford Algebras and their Applications*, Bauhaus-University Weimar, Germany, 2011

CONFERENCE PRESENTATIONS

- | | |
|---------|---|
| 06/2020 | EG / VGTC Conference on Visualization, Nyköping, Sweden (EuroVis 2020) |
| 06/2019 | EG / VGTC Conference on Visualization, Porto, Portugal (EuroVis 2019) |
| 06/2019 | Visualization in Environmental Sciences, co-located event of EuroVis 2019, Porto, Portugal (EnvirVis 2019) |
| 10/2018 | IEEE Visualization Conference 2018, Berlin, Germany (VIS 2018) |
| 10/2017 | IEEE Visualization Conference 2017, Phoenix, AZ, USA (VIS 2017) |
| 06/2017 | Workshop on Reproducibility, Verification, and Validation in Visualization, co-located event of EuroVis 2017, Barcelona, Spain (EuroRV3 2017) |

- 06/2017 International Conference in Central Europe on Computer Graphics, Visualization and Computer Vision, Pilsen, Czech Republic (WSCG 2017)
- 05/2017 Department of Energy Computer Graphics Forum, Golden, CO, USA (DOECGF 2017)
- 10/2016 The Grace Hopper Celebration of Women in Computing, Houston, Texas (GHC 2016)
- 06/2016 EG / VGTC Conference on Visualization, Groningen, Netherlands (EuroVis 2016)
- 06/2016 Visualization in Environmental Sciences, co-located event of EuroVis 2016, Groningen, Netherlands (EnvirVis 2016)
- 10/2015 5th IEEE Symposium on Large Data Analysis and Visualization co-located with IEEE VIS Chicago, IL, USA (LDAV 2015)
- 05/2015 EG / VGTC Conference on Visualization, Cagliari, Italy (EuroVis 2015)
- 04/2015 8th IEEE Pacific Visualization Symposium (PacificVis 2015), Zhejiang University, Hangzhou, China
- 11/2014 IEEE VIS 2014 poster session, Paris, France (VIS 2014)
- 03/2014 7th IEEE Pacific Visualization Symposium, Yokohama, Japan (PacificVis 2014)
- 09/2013 11th International Conference of Numerical Analysis and Applied Mathematics, Rodos Palace Hotel, Greece (ICNAAM 2013)
- 07/2012 9th International Conference on Mathematical Problems in Engineering, Aerospace and Sciences, Vienna University of Technology, Austria (ICNPAA 2012)
- 07/2012 Applied Geometric Algebras in Computer Science and Engineering, University of La Rochelle, France (AGACSE 2012)
- 07/2011 9th International Conference on Clifford Algebras and their Applications, Weimar, Germany (ICCA 9)

INVITED TALKS

- 02/2021 Visualization Seminar, Scientific Computing and Imaging Institute, University of Utah, Salt Lake City, UT, USA
- 05/2019 Dagstuhl Seminar 19212 on Topology, Computation and Data Analysis 2019, Schloss Dagstuhl, Germany
- 10/2018 IEEE Visualization Conference 2018 panel “Perspectives in Color Research for Scientific Visualization: Understanding the Lenses and Languages”, Berlin, Germany (VIS 2018)
- 01/2018 Dagstuhl Seminar 18041 on Foundations of Data Visualization 2018, Schloss Dagstuhl, Germany
- 07/2017 Dagstuhl Seminar 17292 on Topology, Computation and Data Analysis 2017, Schloss Dagstuhl, Germany
- 09/2016 Seminar: “Flow Visualization in the Environmental Sciences”, Bradbury Science Museum, Los Alamos, NM, USA
- 02/2016 Seminar: “Moment Invariants in Flow Visualization”, Information Science & Technology Institute (ISTI), Los Alamos National Laboratory, Los Alamos, NM, USA

- 10/2015 Seminar: “Features in Scientific Visualization”, General Meeting of the International Research Training Group “Physical Modeling for Virtual Manufacturing Systems and Processes” (IRTG 2057), Monterey, CA, USA
- 09/2015 Visualization Seminar, Scientific Computing and Imaging Institute, University of Utah, Salt Lake City, UT, USA
- 12/2014 Seminar: “Moment Invariants for Flow Fields by means of Normalization”, Institute of Information Theory and Automation, Prague, Czech Republic
- 03/2014 Seminar: “Moment Invariants for 2D Flow Fields via Normalization”, Department of Material Sciences, International Christian University. Tokyo, Japan
- 03/2012 Seminar: “A General Geometric Fourier Transform”, Department of Mathematical Analysis, Ghent University, Belgium
- 03/2011 Research Seminar: “Clifford Fourier Transforms”, Department of Applied Physics, University of Fukui, Japan

TEACHING EXPERIENCE

- 2021 Guest Lecturer: “Vector Field Topology.”, part of Professor Bei Wang’s lecture series “Topological Data Analysis for Data Scientists.” Scientific Computing and Imaging Institute (SCI Institute), University of Utah, Salt Lake City. Prepared and held lecture.
- 2015 Participant: “Student, Classroom, Instructor: Strategies for Aligning Teaching with Learning.” Center for Educational Effectiveness, UC Davis. Workshop focusing on teaching taxonomy, educational equity, lesson planning, strategies for engaging and assessing students during lecture, promoting student interaction, and incorporation of technology in the classroom.
- 2014 Teaching Assistant: “Signal Processing”, Dr. Mario Hlawitschka. Developed and organized complete series of homework assignments. Taught ancillary concepts not addressed during the lecture. Led discussion and evaluated homework results with students. Assistant auditor for oral examinations.
- 2009 - 2010 Teaching Assistant: “Mathematics for Teaching”, Professor Friedbert Prüfer. Taught ancillary concepts useful for mathematical problems assigned as homework. Led discussion of homework with students. Assistant auditor for oral examinations. Substitute Lecturer for Prof. Prüfer as needed.
- 2009 Teaching Assistant: “Numerical Mathematics”, Professor Peter Kunkel. Led recitation session on applying lecture concepts to practical problems, both by calculation and implementation. Led discussion of homework results with students.
- 2007 - 2008 Teaching Assistant: “Introductory Mathematics”, Dr. Dieter Sosna. Led recitation session to apply the theory from the lectures to solve task-based homework. Evaluation and discussion of results with students.

2006 - 2008	Teaching Assistant: “Java Programming Practical Course”, Dr. Monika Meiler. Led recitation session focusing on student modeling and implementation projects (small group projects) including discussion of students’ object oriented design approaches and suggestions for possible improvements. Evaluation and grading of student implementations.
2005, 2006	Teaching Assistant: “Introductory C Programming Practical Course”, Dr. Monika Meiler. Led recitation session to apply theory from the lecture to practical implementations in the computer lab. Taught group lessons on syntax of the programming language C and assisted students individually.

SYNERGISTIC AND SERVICE ACTIVITIES

06/2021	Best Paper Co-Chair: EG/VGTC Conference on Visualization, Zurich, Switzerland (EuroVis 2021)
10/2020	Short Paper Co-Chair: IEEE Scientific Visualization 2020, Salt Lake City, USA (VIS 2020)
10/2020	Papers Committee Member: IEEE Scientific Visualization 2020, Salt Lake City, USA (VIS 2020)
10/2020	Papers Committee Member: Leipzig Symposium on Visualization In Applications, Leipzig, Germany (LEVIA 2020)
06/2020	Papers Committee Member: EG/VGTC Conference on Visualization, Nyköping, Sweden (EuroVis 2020)
06/2020	Papers Committee Member: Visualization in Environmental Sciences co-located event of EuroVis 2020, Nyköping, Sweden (EnvirVis 2020)
10/2019	Short Paper Co-Chair: IEEE Scientific Visualization 2019, Vancouver, Canada (VIS 2019)
11/2019	Scientific Visualization and Data Analytics Showcase Committee Member: The International Conference for High Performance Computing, Networking, Storage, and Analysis, Denver, CO (SC19)
10/2019	Papers Committee Member: IEEE Scientific Visualization 2019, Vancouver, Canada (VIS 2019)
06/2019	Best Posters Committee Member: EG/VGTC Conference on Visualization, Porto, Portugal (EuroVis 2019)
06/2019	Program Committee member: Topology-Based Methods in Visualization 2019, Nyköping, Sweden (TopoInVis 2019)
06/2019	Paper Co-Chair: Visualization in Environmental Sciences co-located event of EuroVis 2019, Porto, Portugal (EnvirVis 2019)
06/2019	Papers Committee Member: EG/VGTC Conference on Visualization, Porto, Portugal (EuroVis 2019)
11/2018	Tutorials Committee Member: The International Conference for High Performance Computing, Networking, Storage, and Analysis, Dallas, TX, USA (SC18)
10/2018	Papers Committee Member: IEEE Scientific Visualization, Berlin, Germany (VIS 2018)

- 10/2018 Papers Committee Member: Leipzig Symposium on Visualization In Applications, Leipzig, Germany (LEVIA 2018)
- 06/2018 Paper Co-Chair: Visualization in Environmental Sciences co-located event of EuroVis 2018 at the Masaryk University, Brno, Czech Republic (EnvirVis 2018)
- 06/2018 Papers Committee Member: EG/VGTC Conference on Visualization at the Masaryk University, Brno, Czech Republic (EuroVis 2018)
- 06/2017 Paper Co-Chair: Visualization in Environmental Sciences, co-located event of EuroVis 2017 at the Universitat Politècnica de Catalunya, Barcelona, Spain (EnvirVis 2017)
- 06/2017 Reviewer for the National Science Foundation (NSF) “Critical Techniques, Technologies and Methodologies for Advancing Foundations and Applications of Big Data Sciences and Engineering (BIGDATA)”, Program Solicitation NSF 17-534
- 04/2017 Papers Committee Member: 10th IEEE Pacific Visualization Symposium at the Seoul National University, Seoul, Korea (PacificVis 2017)
- 03/2017 Workshop Organizer: “Building an Electromagnetic Engine” at Expanding your Horizons, Santa Fe, NM (GHC 2016)
- 10/2016 Workshop Facilitator: “Discovery Jam” at IEEE VIS 2016, Baltimore, MD (VIS 2016)
- 10/2016 Workshop Organizer: “Using ParaView for Scientific Visualization” at The Grace Hopper Celebration of Women in Computing, Houston, TX (GHC 2016)
- 03/2016 Workshop Organizer: “Building an Electromagnetic Engine” at Expanding your Horizons, Santa Fe, NM (GHC 2016)
- 08/2014 Workshop Organizer: “Quaternion and Clifford Fourier Transforms and Wavelets 2” at the 10th International Conference on Clifford Algebras and their Applications in Mathematical Physics at the University of Tartu, Estonia (ICCA 10)

REFERENCES

Dr. James Ahrens
 Data Science at Scale Team
 Los Alamos National Laboratory
 ahrens@lanl.gov

Professor Hans Hagen
 Department of Computer Science
 Technical University Kaiserslautern
 hagen@cs.uni-kl.de

Professor Kenneth I. Joy
 Department of Computer Science
 University of California, Davis
 joy@cs.ucdavis.edu

Professor Gerik Scheuermann
 Department of Computer Science
 Leipzig University
 scheuermann@informatik.uni-leipzig.de