CURRICULUM VITAE - Joshua A. Levine

PERSONAL DATA

Associate Professor
Department of Computer Science
University of Arizona
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EDUCATION

Ph.D., Computer Science
The Ohio State University, Sept. 09
Dissertation: Delaunay Methods for Approximating Geometric Domains
Adviser: Tamal K. Dey.

M.S., Computer Science
Case Western Reserve University, Jan. 04
Thesis: Sampling-Based Planning for Hybrid Systems
Adviser: Michael S. Branicky.

B.S., Computer Engineering & Mathematics
Case Western Reserve University, May 03
Cum Laude
Minor: Music.

EMPLOYMENT

Associate Professor, Aug. 20 – Present
Department of Computer Science, University of Arizona.

Assistant Professor, Aug. 16 – May 20
Department of Computer Science, University of Arizona.

Assistant Professor, Visual Computing Division, Aug. 12 – Jun. 16
School of Computing, Clemson University.

Postdoctoral Research Associate, Oct. 09 – Jul. 12
SCI Institute, University of Utah.

Graduate Research & Teaching Associate, Sept. 04 – Sept. 09
CSE Department, The Ohio State University.

Research Assistant, Jun. 03 – Aug. 03
EECS Department, Case Western Reserve University.

HONORS AND AWARDS

Faculty Service Award, Department of Computer Science, University of Arizona (2024).

Certificate of Appreciation for Outstanding Service, IEEE VIS (2022).

Faculty DEI Award, Department of Computer Science, University of Arizona (2021).

Outstanding Faculty Teaching, Department of Computer Science, University of Arizona (2021).

Outstanding Faculty Researcher, Department of Computer Science, University of Arizona (2019).

Early Career Research Program Award, Department of Energy (2018).

Best Paper Honorable Mention, IEEE VIS 2017: SciVis (2017).

Best Paper, IEEE Symposium on Large-Scale Data Analysis and Visualization (2012).

Best Paper Finalist, 53$^{\text{rd}}$ Cray User Group Meeting (2011).

Best Paper, 4$^{\text{th}}$ IEEE Pacific Visualization Symposium (2011).

Best Paper, 19$^{\text{th}}$ International Meshing Roundtable (2010).

Best Student Technical Poster, 16$^{\text{th}}$ International Meshing Roundtable (2007).

University Fellowship, The Ohio State University (2004 – 2005).

President's Scholarship, Case Western Reserve University (1999 – 2003).

PUBLICATIONS / CREATIVE ACTIVITY

Books and Monographs

B-2. Abhinav Bhatele, David Böhme, Joshua A. Levine, Allen D. Malony, and Martin Schulz, editors. *Programming and Performance Visualization Tools - International Workshops, ESPT 2017 and VPA 2017, Denver, CO, USA, November 12 and 17, 2017, and ESPT 2018 and VPA 2018, Dallas, TX, USA, November 16 and 11, 2018, Revised Selected Papers*, volume 11027 of *Lecture Notes in Computer Science*. Springer, May 2019.

B-1. Joshua A. Levine, Rasmus R. Paulsen, and Yongjie Zhang, editors. *Mesh Processing in Medical Image Analysis 2012 - MICCAI 2012 International Workshop, MeshMed 2012, Nice, France, October 1, 2012. Proceedings*, volume 7599 of *Lecture Notes in Computer Science*. Springer, October 2012.

Refereed Chapters in Edited Books

E-5. Talha Bin Masood, Joseph Budin, Martin Falk, Guillaume Favelier, Christoph Garth, Charles Gueunet, Pierre Guillou, Lutz Hofmann, Petar Hristov, Adhitya Kamakshidasan, Christopher Kappe, Pavol Klacansky, Patrick Laurin, Joshua A. Levine, Jonas Lukasczyk, Daisuke Sakurai, Maxime Soler, Peter Steneteg, Julien Tierny, Will Usher, Jules Vidal, and Michal Wozniak. An overview of the Topology ToolKit. In Ingrid Hotz, Talha Bin Masood, Filip Sadlo, and Julien Tierny, editors, *Topological Methods in Data Analysis and Visualization VI – Theory, Applications, and Software*, pages 327–342. Springer, September 2021.

E-4. Ryan Cotsakis, Jim Shaw, Julien Tierny, and Joshua A. Levine. Implementing persistence-based clustering of point clouds in the Topology ToolKit. In Ingrid Hotz, Talha Bin Masood, Filip Sadlo, and Julien Tierny, editors, *Topological Methods in Data Analysis and Visualization VI – Theory, Applications, and Software*, pages 343–357. Springer, September 2021.

E-3. Joshua A. Levine, David Thompson, Janine C. Bennett, Peer-Timo Bremer, Attila Gyulassy, Valerio Pascucci, and Philippe Pébay. Analysis of uncertain scalar data with hixels. In Min Chen, Hans Hagen, Charles Hansen, Chris Johnson, and Arie Kaufman, editors, *Scientific Visualization: Uncertainty, Multifield, Biomedical, and Scalable Visualization*, Mathematics + Visualization. Springer, September 2014.

E-2. Shreeraj Jadhav, Harsh Bhatia, Peer-Timo Bremer, Joshua A. Levine, Luis Gustavo Nonato, and Valerio Pascucci. Consistent approximation of local flow behavior for 2D vector fields using edge maps. In R. Peikert, H. Hauser, H. Carr, and R. Fuchs, editors, *Topological Methods in Data Analysis and Visualization II – Theory, Algorithms, and Applications*, pages 141–160. Springer, January 2012.

E-1. Siu-Wing Cheng, Tamal K. Dey, and Joshua A. Levine. Theory of a practical Delaunay meshing algorithm for a large class of domains. In B.B. Bhattacharya, S. Sur-Kolay, S.C. Nandy, and A. Bagchi, editors, *Statistical Science and Interdisciplinary Research – Vol. 3: Algorithms, Architures and Information Systems Security*, pages 25–42. World Scientific Press, November 2008.

Refereed Journal Articles

J-31. Keith Runge, Pierre A. Deymier, M. Arif Hasan, Trevor D. Lata, and Joshua A. Levine. Acoustic metamaterials for realizing a scalable multiple phi-bit unitary transformation. *AIP Advances*, 14(2):025010, February 2024.

J-30. Pierre A. Deymier, Keith Runge, M. Arif Hasan, Trevor D. Lata, and Joshua A. Levine. Practical implementation of a scalable discrete fourier transform using logical phi-bits: nonlinear acoustic qubit analogues. *Quantum Studies: Mathematics and Foundations*, pages 1–13, December 2023.

J-29. Pierre A. Deymier, Keith Runge, M. Arif Hasan, Trevor D. Lata, and Joshua A. Levine. Tuning logical phi-bit state vectors in an externally driven nonlinear array of acoustic waveguides via drivers' phase. *Quantum Reports*, 5(2):325–344, May 2023.

J-28. Pierre A. Deymier, Keith Runge, Philippe Cutillas, M. Arif Hasan, Trevor D. Lata, and Joshua A. Levine. Scalable exponentially complex representations of logical phi-bit states and experimental demonstration of an operable three phi-bit gate using an acoustic metastructure. *Applied Physics Letters*, 122(14):141701, April 2023.

J-27. Pierre A. Deymier, Keith Runge, M. Arif Hasan, Trevor D. Lata, Joshua A. Levine, and Philippe Cutillas. Realizing acoustic qubit analogues with nonlinearly tunable phi-bits in externally driven coupled acoustic waveguides. *Scientific Reports*, 13(1):1–16, January 2023.

J-26. Brian Bollen, Pasindu Tennakoon, and Joshua A. Levine. Computing a stable distance on merge trees. *IEEE Trans. on Visualization and Computer Graphics (Special Issue IEEE VIS 2022)*, 29(1):1168–1177, January 2023.

J-25. Pierre A. Deymier, Keith Runge, M. Arif Hasan, Joshua A. Levine, and Philippe Cutillas. Setting the stage for materials simulation using acoustic metamaterials digital quantum analogue computing platforms. *Modelling and Simulation in Materials Science and Engineering*, 30(8):084003, October 2022.

J-24. Keith Runge, M. Arif Hasan, Joshua A. Levine, and Pierre A. Deymier. Demonstration of a two-bit controlled-NOT quantum-like gate using classical acoustic qubit-analogues. *Scientific Reports*, 12(1):1–6, August 2022.

J-23. Justin Crum, Cyrus Cheng, David A. Ham, Lawrence Mitchell, Robert C. Kirby, Joshua A. Levine, and Andrew Gillette. Bringing trimmed serendipity methods to computational practice in firedrake. *ACM Trans. Math. Softw.*, 48(1):8:1–8:19, February 2022.

J-22. Zhenge Zhao, Danilo Motta, Matthew Berger, Joshua A. Levine, Ismail B. Kuzucu, Robert B. Fleischman, Afonso Paiva, and Carlos Scheidegger. STFT-LDA: An algorithm to facilitate the visual analysis of building seismic responses. *Information Visualization*, 20(4):263–282, August 2021.

J-21. Nghia Truong, Cem Yuksel, Chakrit Watcharopas, Joshua A. Levine, and Robert M. Kirby. Particle merging-and-splitting. *IEEE Trans. on Visualization and Computer Graphics*, 28(12):4546–4557, June 2021.

J-20. Yuzhe Lu, Kairong Jiang, Joshua A. Levine, and Matthew Berger. Compressive neural representations of volumetric scalar fields. *Computer Graphics Forum (EuroVis Proceedings)*, 40(3):135–146, June 2021.

J-19. Ashok Jallepalli, Joshua A. Levine, and Robert M. Kirby. The effect of data transformation methodologies on the topological analysis of high-order FEM solutions. *IEEE Trans. on Visualization and Computer Graphics (Special Issue IEEE VIS 2019: SciVis)*, 26(1):162–172, January 2020.

J-18. Justin Crum, Joshua A. Levine, and Andrew Gillette. Extending discrete exterior calculus to a fractional derivative. *Computer-Aided Design (Special Issue of Symposium on Solid and Physical Modeling)*, 114:64–72, September 2019.

J-17. Matthew Berger, Jixian Li, and Joshua A. Levine. A generative model for volume rendering. *IEEE Trans. on Visualization and Computer Graphics*, 25(4):1636–1650, April 2019.

J-16. Julien Tierny, Guillaume Favelier, Joshua A. Levine, Charles Gueunet, and Michael Michaux. The Topology ToolKit. *IEEE Trans. on Visualization and Computer Graphics (Special Issue IEEE VIS 2017: SciVis)*, 24(1):832–842, January 2018. **Best Paper Honorable Mention**.

J-15. Matthew Berger, Andrea Tagliasacchi, Lee M. Seversky, Pierre Alliez, Gaël Guennebaud, Joshua A. Levine, Andrei Sharf, and Cláudio T. Silva. A survey of surface reconstruction from point clouds. *Computer Graphics Forum*, 36(1):301–329, February 2016.

J-14. Attila Gyulassy, David Günther, Joshua A. Levine, Julien Tierny, and Valerio Pascucci. Conforming Morse-Smale complexes. *IEEE Trans. on Visualization and Computer Graphics (Special Issue IEEE VIS 2014: SciVis)*, 20(12):2595–2603, December 2014.

J-13. Jonathan R. Bronson, Shankar P. Sastry, Joshua A. Levine, and Ross T. Whitaker. Adaptive and unstructured mesh cleaving. *Procedia Engineering (Proc. 23rd International Meshing Roundtable)*, 82(0):266–278, October 2014.

J-12. Jonathan R. Bronson, Joshua A. Levine, and Ross T. Whitaker. Lattice cleaving: A multimaterial tetrahedral meshing algorithm with guarantees. *IEEE Trans. on Visualization and Computer Graphics*, 20(2):223–237, February 2014.

J-11. Matthew Berger, Joshua A. Levine, Luis Gustavo Nonato, Gabriel Taubin, and Claudio T. Silva. A benchmark for surface reconstruction. *ACM Transactions on Graphics*, 32(2):20:1–20:17, April 2013.

J-10. Aaditya G. Landge, Joshua A. Levine, Katherine E. Isaacs, Abhinav Bhatele, Todd Gamblin, Martin Schulz, Steve H. Langer, Peer-Timo Bremer, and Valerio Pascucci. Visualizing network traffic to understand the performance of massively parallel simulations. *IEEE Trans. on Visualization and Computer Graphics (Special Issue IEEE VIS 2012: InfoVis)*, 18(12):2467–2476, December 2012.

J-9. Joshua A. Levine, Rasmus R. Paulsen, and Yongjie Zhang. Mesh processing in medical image analysis – a tutorial. *IEEE Computer Graphics and Applications*, 32(5):22–28, September 2012.

J-8. Jonathan R. Bronson, Joshua A. Levine, and Ross T. Whitaker. Particle systems for adaptive, isotropic meshing of CAD models. *Engineering with Computers*, 28(4):331–344, May 2012.

J-7. Harsh Bhatia, Shreeraj Jadhav, Peer-Timo Bremer, Guoning Chen, Joshua A. Levine, Luis Gustavo Nonato, and Valerio Pascucci. Flow visualization with quantified spatial and temporal errors using edge maps. *IEEE Trans. on Visualization and Computer Graphics*, 18(9):1383–1396, September 2012.

J-6. Joshua A. Levine, Shreeraj Jadhav, Harsh Bhatia, Valerio Pascucci, and Peer-Timo Bremer. A quantized boundary representation of 2D flow. *Computer Graphics Forum (EuroVis Proceedings)*, 31(3pt1):945–954, June 2012.

J-5. Tamal K. Dey, Firdaus Janoos, and Joshua A. Levine. Meshing interfaces of multi-label data with Delaunay refinement. *Engineering with Computers*, 28(1):71–82, January 2012.

J-4. Tamal K. Dey, Joshua A. Levine, and A. Slatton. Localized Delaunay refinement for sampling and meshing. *Computer Graphics Forum (Special Issue of Eurographics SGP)*, 29(5):1723–1732, July 2010.

J-3. Tamal K. Dey and Joshua A. Levine. Delaunay meshing of piecewise smooth complexes without expensive predicates. *Algorithms*, 2(4):1327–1349, November 2009.

J-2. Tamal K. Dey and Joshua A. Levine. Delaunay meshing of isosurfaces. *The Visual Computer*, 24(6):411–422, June 2008.

J-1. Michael S. Branicky, Michael M. Curtiss, Joshua A. Levine, and Stuart B. Morgan. Sampling-based planning, control, and verification of hybrid systems. *IEE Proceedings Control Theory and Applications*, 153(5):575–590, September 2006.

Refereed Articles in Conference Proceedings

C-25. Zhe Wang, Dylan Cashman, Mingwei Li, Jixian Li, Matthew Berger, Joshua A. Levine, Remco Chang, and Carlos Scheidegger. Neuralcubes: Deep representations for visual data exploration. In *IEEE International Conference on Big Data (Big Data)*, pages 550–561, Orlando, FL, December 2021. IEEE.

C-24. Kairong Jiang, Matthew Berger, and Joshua A. Levine. Visualization of unsteady flow using heat kernel signatures. In *Pacific Visualization Symposium*, pages 96–105. IEEE, June 2020.

C-23. Matthew Berger, Ajay Nagesh, Joshua A. Levine, Mihai Surdeanu, and Hao Helen Zhang. Visual supervision in bootstrapped information extraction. In *Proceedings of the Conference on Empirical Methods in Natural Language Processing (EMNLP)*, pages 2043–2053, Brussels, Belgium, November 2018. Association for Computational Linguistics.

C-22. Ben Jones, Tamar Shinar, Joshua A. Levine, and Adam W. Bargteil. Efficient collision detection for example-based deformable bodies. In *Proceedings of the Tenth International Conference on Motion in Games*, pages 4:1–4:5, Barcelona, Spain, November 2017. ACM.

C-21. Michael Falkenstein, Ben Jones, Joshua A. Levine, Tamar Shinar, and Adam W. Bargteil. Reclustering for large plasticity in clustered shape matching. In *Proceedings of the Tenth International Conference on Motion in Games*, pages 5:1–5:6, Barcelona, Spain, November 2017. ACM.

C-20. Ben Jones, April Martin, Joshua A. Levine, Tamar Shinar, and Adam W. Bargteil. Ductile fracture for clustered shape matching. In *Proceedings of the 20th Symposium on Interactive 3D Graphics and Games*, pages 65–70, Redmond, WA, February 2016. ACM.

C-19. Chakrit Watcharopas, Yash Sapra, Robert Geist, and Joshua A. Levine. Extracting surface geometry from particle-based fracture simulations. In *Advances in Visual Computing - 11th International Symposium, ISVC 2015, Proceedings, Part I*, volume 9474 of *Lecture Notes in Computer Science*, pages 82–91, Las Vegas, NV, December 2015. Springer.

C-18. Joshua A. Levine, Christopher Corsi, Jerry Tessendorf, Adam W. Bargteil, and Robert Geist. A peridynamic perspective on spring-mass fracture. In *Symposium on Computer Animation*, pages 47–55, Copenhagen, Denmark, July 2014. Eurographics Association.

C-17. Matthew Berger, Andrea Tagliasacchi, Lee M. Seversky, Pierre Alliez, Joshua A. Levine, Andrei Sharf, and Claudio T. Silva. State of the art in surface reconstruction from point clouds. In *Eurographics (State of the Art Reports)*, pages 161–185, Strasbourg, France, April 2014. Eurographics Association.

C-16. David Alexander Stuart, Joshua A. Levine, Ben Jones, and Adam W. Bargteil. Automatic construction of coarse, high-quality tetrahedralizations that enclose and approximate surfaces for animation. In *Motion in Games*, pages 191:213–191:222, Dublin, Ireland, November 2013. ACM.

C-15. Abhinav Bhatele, Todd Gamblin, Steven H. Langer, Peer-Timo Bremer, Erik W. Draeger, Bernd Hamann, Katherine E. Isaacs, Aaditya G. Landge, Joshua A. Levine, Valerio Pascucci, Martin Schulz, and Charles H. Still. Mapping applications with collectives over sub-communicators on torus networks. In *SC Conference for High Performance Computing, Networking, Storage, and Analysis*, page 97. IEEE/ACM, November 2012.

C-14. Sidharth Kumar, Venkatram Vishwanath, Philip H. Carns, Joshua A. Levine, Robert Latham, Giorgio Scorzelli, Hemanth Kolla, Ray W. Grout, Robert B. Ross, Michael E. Papka, Jacqueline Chen, and Valerio Pascucci. Efficient data restructuring and aggregation for I/O acceleration in PIDX. In *SC Conference for High Performance Computing, Networking, Storage, and Analysis*, page 50. IEEE/ACM, November 2012.

C-13. Shusen Liu, Joshua A. Levine, Peer-Timo Bremer, and Valerio Pascucci. Gaussian mixture model based volume visualization. In *IEEE Symposium on Large-Scale Data Analysis and Visualization*, October 2012. **Best Paper Award**.

C-12. Jonathan R. Bronson, Joshua A. Levine, and Ross T. Whitaker. Lattice cleaving: Conforming tetrahedral meshes of multimaterial domains with bounded quality. In *21st International Meshing Roundtable*, pages 191–210, San Jose, CA, October 2012. Springer.

C-11. Darrell J. Swenson, Joshua A. Levine, Jess D. Tate, Ross T. Whitaker, and Rob S. MacLeod. Impacts of boundary conforming meshes on electrical cardiac simulation. In *21st International Meshing Roundtable*, pages 585–602, San Jose, CA, October 2012. Springer.

C-10. David C. Thompson, Joshua A. Levine, Janine C. Bennett, Peer-Timo Bremer, Attila Gyulassy, Valerio Pascucci, and Philippe Pébay. Analysis of large-scale scalar data using hixels. In *IEEE Symposium on Large-Scale Data Analysis and Visualization*, pages 23–30, Providence, RI, October 2011. IEEE.

C-9. Martin Schulz, Joshua A. Levine, Peer-Timo Bremer, Todd Gamblin, and Valerio Pascucci. Interpreting performance data across intuitive domains. In *International Conference on Parallel Processing*, pages 206–215, Taipei, Taiwan, September 2011. IEEE.

C-8. Harsh Bhatia, Shreeraj Jadhav, Peer-Timo Bremer, Guoning Chen, Joshua A. Levine, Luis Gustavo Nonato, and Valerio Pascucci. Edge maps: Representing flow with bounded error. In *4th Pacific Visualization Symposium*, pages 75–82, Hong Kong, China, March 2011. IEEE. **Best Paper Award**.

C-7. Jonathan R. Bronson, Joshua A. Levine, and Ross T. Whitaker. Particle systems for adaptive, isotropic meshing of CAD models. In *19th International Meshing Roundtable*, pages 279–296, Chattanooga, TN, October 2010. Springer. **Best Paper Award**.

C-6. Darrell J. Swenson, Joshua A. Levine, Zhisong Fu, Jess Tate, and Robert S. MacLeod. The effect of non-conformal finite element boundaries on electrical monodomain and bidomain simulations. In *Computing in Cardiology*, volume 37, pages 97–101, Belfast, United Kingdom, September 2010. IEEE.

C-5. Oleksiy Busaryev, Tamal K. Dey, and Joshua A. Levine. Repairing and meshing imperfect shapes with Delaunay refinement. In *SIAM/ACM Joint Conference on Geometric and Physical Modeling*, pages 25–33, San Francisco, CA, October 2009. ACM.

C-4. Siu-Wing Cheng, Tamal K. Dey, and Joshua A. Levine. A practical Delaunay meshing algorithm for a large class of domains. In *16th International Meshing Roundtable*, pages 477–494, Seattle, WA, October 2007. Springer.

C-3. Tamal K. Dey, Joshua A. Levine, and Rephael Wenger. A Delaunay simplification algorithm for vector fields. In *15th Pacific Conference on Computer Graphics and Applications*, pages 281–290, Maui, HI, October 2007. IEEE Computer Society.

C-2. Tamal K. Dey and Joshua A. Levine. Delaunay meshing of isosurfaces. In *Shape Modeling International*, pages 241–250, Lyon, France, June 2007. IEEE Computer Society.

C-1. Michael S. Branicky, Michael M. Curtiss, Joshua A. Levine, and Stuart B. Morgan. RRTs for nonlinear, discrete, and hybrid planning and control. In *42nd IEEE Conference on Decision and Control*, pages 657–663, Maui, HI, December 2003. IEEE.

Invited Articles in Conference Proceedings

I-1. Martin Schulz, Jim Belak, Abhinav Bhatele, Peer-Timo Bremer, Greg Bronevetsky, Marc Casas, Todd Gamblin, Katherine E. Isaacs, Ignacio Laguna, Joshua A. Levine, Valerio Pascucci, David Richards, and Barry Rountree. Performance analysis techniques for the exascale co-design process. In *PARCO*, volume 25 of *Advances in Parallel Computing*, pages 19–32. IOS Press, March 2014.

Short Papers and Abstracts

S-5. Ben Jones, April Martin, Joshua A. Levine, Tamar Shinar, and Adam W. Bargteil. Clustering and collision detection for clustered shape matching. In *Proceedings of the 8th Conference on Motion in Games*, pages 199–204, Paris, France, November 2015. ACM.

S-4. Jonathan R. Bronson, Joshua A. Levine, and Ross T. Whitaker. Scalable lattice cleaving. In *SIAM Conference on Parallel Processing for Scientific Computing*, Portland, OR, February 2014.

S-3. Jonathan R. Bronson, Shankar P. Sastry, Mark B. Kim, Joshua A. Levine, and Ross T. Whitaker. Towards tetrahedral meshing with decoupled element and boundary constraints. In *22nd International Meshing Roundtable (Research Note)*, Orlando, FL, October 2013.

S-2. Joshua A. Levine, Shusen Liu, Avishek Saha, Peer-Timo Bremer, and Valerio Pascucci. Volume visualization techniques for ensembles of fields. In *Workshop on the Analysis of Large Scale, High-Dimensional, and Multivariate Data Using Topology and Statistics*, Le Barp, France, June 2013.

S-1. Joshua A. Levine, Zhisong Fu, Darrell J. Swenson, Robert S. MacLeod, and Ross T. Whitaker. A comparison of Delaunay-based meshing algorithms for electrophysical cardiac simulation. In *VPH: Virtual Physiological Human 2010*, pages 181–183, Brussels, Belgium, October 2010.

Articles in Workshop Proceedings

W-9. Jixian Li, Danielle Van Boxel, and Joshua A. Levine. Autoencoder-aided visualization of collections of Morse complexes. In *Proceedings of TopoInVis, the IEEE VIS Workshop on Topological Data Analysis and Visualization*, Oklahoma City, OK, October 2022. IEEE.

W-8. Benafsh Husain, Alfredo Giménez, Joshua A. Levine, Todd Gamblin, and Peer-Timo Bremer. Relating memory performance data to application domain data using an integration api. In *Proceedings of the 2nd Workshop on Visual Performance Analysis*, pages 5:1–5:8, Austin, TX, November 2015. ACM.

W-7. Robert Geist, Joshua A. Levine, and James Westall. A problem-based learning approach to gpu computing. In *Proceedings of the Workshop on Education for High-Performance Computing*, pages 5:1–5:8, Austin, TX, November 2015. ACM.

W-6. Haimasree Bhattacharya, Joshua A. Levine, and Adam W. Bargteil. Fluid simulation on unstructured quadrilateral surface meshes. In *Structured-Meshing: Theory, Applications, and Evaluation (CASA 2014 Workshop)*, Houston, TX, May 2014.

W-5. Martin Schulz, Abhinav Bhatele, Peer-Timo Bremer, Todd Gamblin, Katherine Isaacs, Joshua A. Levine, and Valerio Pascucci. Creating a tool set for optimizing topology-aware node mappings. In *5th International Workshop on Parallel Tools for High Performance Computing*, pages 1–12, Dresden, Germany, September 2011. Springer Berlin Heidelberg.

W-4. Todd Gamblin, Martin Schulz, Peer-Timo Bremer, Joshua A. Levine, and Valerio Pascucci. Intuitive performance visualization techniques for topological analysis on capability machines. In *Summer United Workshops on Parallel, Distributed, and Cooperative Processing*, Kagoshima, Japan, July 2011.

W-3. Steven H. Langer, Bert Still, Peer-Timo Bremer, Denise Hinkel, Bruce Langdon, Joshua A. Levine, and Ed Williams. Cielo full-system simulations of multi-beam laser-plasma interaction in NIF experiments. In *CUG 2011, Proceedings of the 53rd Cray User Group Meeting*, Fairbanks, AK, May 2011. Cray User Group, Inc. **Best Paper Finalist**.

W-2. Michael S. Branicky, Michael M. Curtiss, Joshua A. Levine, and Stuart B. Morgan. Sampling-based reachability algorithms for control and verification of complex systems. In *13th Yale Workshop on Adaptive and Learning Systems*, New Haven, CT, May 2005.

W-1. Michael S. Branicky, Michael M. Curtiss, Joshua A. Levine, and Stuart B. Morgan. Sampling-based planning and control. In *12th Yale Workshop on Adaptive and Learning Systems*, New Haven, CT, May 2003.

Refereed Multimedia in Conference Proceedings

M-2. Attila Gyulassy, Joshua A. Levine, and Valerio Pascucci. Visualization of discrete gradient construction (multimedia submission). In *27th Symposium on Computational Geometry*, pages 289–290, Paris, France, June 2011. ACM.

M-1. Tamal K. Dey and Joshua A. Levine. DelPSC: a Delaunay mesher for piecewise smooth complexes (multimedia submission). In *24th Symposium on Computational Geometry*, pages 220–221, College Park, MD, June 2008. ACM.

Posters

P-4. Benafsh Husain, Alfredo Giménez, Todd Gamblin, Peer-Timo Bremer, and Joshua A. Levine. Visualizing fine-grained memory accesses using linked software and hardware views. Poster at IEEE Vis, Chicago, IL, October 2015.

P-3. Aaditya Landge, Joshua A. Levine, Peer-Timo Bremer, Martin Schulz, Todd Gamblin, Abhinav Bhatele, Katherine Isaacs, and Valerio Pascucci. Interactive linked visualizations for performance analysis of heterogeneous computing clusters. Poster at GPU Technology Conference, San Jose, CA, May 2012.

P-2. Tamal K. Dey and Joshua A. Levine. Delaunay mesh generation for a large class of domains. Poster at 16th International Meshing Roundtable, Seattle, WA, October 2007. **Best Student Technical Poster**.

P-1. Michael S. Branicky, Michael M. Curtiss, Ben Karas, Joshua A. Levine, and Stuart B. Morgan. Sampling-based motion planning. Poster at Research ShowCase, Case Western Reserve University, Cleveland, OH, April 2003.

Theses

T-2. Joshua Aaron Levine. *Delaunay Methods for Approximating Geometric Domains*. PhD thesis, Department of Computer Science and Engineering, The Ohio State University, September 2009.

T-1. Joshua Aaron Levine. Sampling-based planning for hybrid systems. Master's thesis, Department of Electrical Engineering and Computer Science, Case Western Reserve University, September 2003.

PUBLICLY AVAILABLE SOFTWARE TOOLS

Development of an open-source library and software collection for topological data analysis in scientific visualization,
the Topology ToolKit (TTK): https://topology-tool-kit.github.io/.

Development of software for tetrahedral meshing of multimaterial image data,
Cleaver: http://www.sci.utah.edu/download/cleaver/.

Development of software for evaluation and benchmarking of surface reconstruction,
http://www.reconbench.org.

Development of software for tetrahedral mesh generation of biomedical domains,
BioMesh3D: http://www.biomesh3d.org.

Development of software for Delaunay mesh generation of piecewise-smooth complexes,
DelPSC: http://www.cse.ohio-state.edu/∼tamaldey/delpsc.html.

Development of software for Delaunay mesh generation of isosurfaces,
DelIso: http://www.cse.ohio-state.edu/∼tamaldey/deliso.html.

CONFERENCES / SCHOLARLY PRESENTATIONS

Invited: Levine, J.A., "Topological and Neural Data Representations for Visualization and Analysis", Tufts University CS Colloquium, Medford, MA (Feb. 2024).

Invited: Levine, J.A., "Neural Representations for Volume Visualization", Monash University, VIS+ Event, Melbourne, Australia (Oct. 2023).

Invited: Levine, J.A., "Neural Representations for Volume Visualization", Tufts University CS Colloquium, Medford, MA (Sept. 2022).

Invited: Levine, J.A., "Neural Representations for Volume Visualization", Sorbonne Université, ERC TORI Seminar, Paris, France (Jul. 2022).

Invited: Levine, J.A., "Topological Data Analysis for Ensembles of Scalar Fields: Measures and Visualization", Beyond Abstract Measures Workshop at Lorentz Center, Leiden, Netherlands (Jun. 2022).

Invited: Levine, J.A., "An Introduction to the Topology ToolKit (TTK)", Topological Data Visualization Workshop, University of Iowa (Virtual) (May 2022).

Invited: Levine, J.A., "Neural Representations for Volume Visualization", University of Montana Department of CS Seminar, Virtual (Mar. 2022).

Invited: Levine, J.A., "Neural Representations for Volume Visualization", Lawrence Livermore National Laboratory, DSI Seminar, Virtual (Feb. 2022).

Invited: Levine, J.A., "Neural Representations for Volume Visualization", University of Utah SCI Seminar, Virtual (Dec. 2021).

Invited: Levine, J.A., "Neural Representations for Volume Visualization", CSIG-VIS International Lecture Series, Virtual (Dec. 2021).

Invited: Levine, J.A., "Visualizing Scalar Data with Computational Topology and Machine Learning", Washington University in St. Louis, St. Louis, MO (Nov. 2018).

Invited: Levine, J.A., "Visualizing Scalar Data with Computational Topology and Machine Learning", Technical University of Munich, Munich, Germany (Oct. 2018).

Invited: Levine, J.A., "Analyzing Scalar Data with Computational Topology and TTK", University of Arizona, Applied Math Colloquium, Tucson, AZ (Oct. 2018).

Invited: Levine, J.A., "Recent Work in Analyzing Scalar Data with Computational Topology and Machine Learning", The Ohio State University, Columbus, OH (Sept. 2018).

Invited: Levine, J.A., "Visualizing (Scientific) Simulations with Geometric and Topological Features", University of Maryland, Baltimore County, Baltimore, MD (Apr. 2016).

Invited: Levine, J.A., "Visualizing (Scientific) Simulations with Geometric and Topological Features", University of Arizona, Tucson, AZ (Feb. 2016).

Invited: Levine, J.A., "A Peridynamic Perspective on Spring-Mass Fracture", Lawrence Livermore National Laboratory, Livermore, CA (Aug. 2014).

Submitted: Levine, J.A., "A Peridynamic Perspective on Spring-Mass Fracture", Symposium on Computer Animation, Copenhagen, Denmark (Jul. 2014).

Submitted: Levine, J.A., "Modeling Fracture on the GPU with Peridynamics", NVIDIA GPU Technology Conference, San Jose, CA (Mar. 2014).

Invited: Levine, J.A., "Discretization Techniques for Simulation Domains", Kitware Inc., Chapel Hill, NC (Mar. 2014).

Submitted: Levine, J.A., "Scalable Lattice Cleaving", SIAM Conference on Parallel Processing for Scientific Computing, Portland, OR (Feb. 2014).

Invited: Levine, J.A., "Discretization Techniques for Simulation Domains", Tsinghua University, Beijing, China (Nov. 2013).

Invited: Levine, J.A., "Discretization Techniques for Simulation Domains", Shandong University, Jinan, China (Nov. 2013).

Invited: Levine, J.A., "Discretization Techniques for Simulation Domains", Zhejiang University, Hangzhou, China (Nov. 2013).

Invited: Levine, J.A., "Discretization Techniques for Simulation Domains", The University of Hong Kong, Pok Fu Lam, Hong Kong. (Nov. 2013).

Invited: Levine, J. A., "Discretization Techniques for Flow and Shape", Air Force Research Laboratory, Rome, NY (Aug. 2013).

Submitted: Levine, J. A., "Volume Visualization Techniques for Ensembles of Fields", Workshop on the Analysis of Large Scale, High-Dimensional, and Multivariate Data Using Topology and Statistics, Le Barp, France (Jun. 2013).

Invited: Levine, J. A., "Discretization Techniques for Flow and Shape", Telecom ParisTech, Paris, France (Jun. 2013).

Invited: Levine, J. A., "Meshing Biomedical Data using Cleaver", Computer Science Colloquium, Old Dominion University, Norfolk, VA (Apr. 2013).

Submitted: Levine, J. A., "Recent Advances in Meshing Techniques for Biomedical Domains", Geometric Modeling and Mesh Generation for FEM and Isogeometric Analysis Symposium (in conjunction with ACM 2013 / FEF 2013), San Diego, CA (Feb. 2013).

Invited: Levine, J. A., "Discretizing Shape for Scientific Modeling and Visualization", College of Science Seminar Series, Coastal Carolina University, Conway, SC (Sep. 2012).

Submitted: Levine, J. A., "A quantized boundary representation of 2D flow", EuroVis, Vienna, Austria (Jun. 2012).

Invited: Levine, J. A., "Discretizing Geometric Domains for Scientific Visualization and Analysis", Argonne National Laboratory, Argonne, IL (Apr. 2012).

Invited: Levine, J. A., "Discretizing Geometric Domains for Scientific Visualization and Analysis", Lawrence Livermore National Laboratory, Livermore, CA (Mar. 2012).

Invited: Levine, J. A., "Discretizing Geometric Domains for Scientific Visualization and Analysis", School of Computing, Clemson University, Clemson, SC (Feb. 2012).

Submitted: Levine, J. A., "Analysis of large-scale scalar data using hixels", IEEE Symposium on Large-Scale Data Analysis and Visualization, Providence, RI (Oct. 2011).

Submitted: Levine, J. A., "A comparison of Delaunay-based meshing algorithms for electrophysical cardiac simulation", VPH: Virtual Physiological Human 2010, Brussels, Belgium (Oct. 2010).

Invited: Levine, J. A., "Emerging Topological Methods for Analyzing Scalar Fields with Uncertainty", Data Analysis Group Seminar, Lawrence Livermore National Laboratory, Livermore, CA (Sep. 2010).

Invited: Levine, J. A., "Visualization of Topology with Uncertainty using Discrete Flow Maps", DOE SciDAC VACET All Hands Meeting, Salt Lake City, Utah (Apr. 2010).

Invited: Levine, J. A., "Representing Vector Fields on 2-Manifolds using Discrete Flow Maps", IRTG (International Research Training Group) Workshop, Snowbird, Utah (Mar. 2010).

Invited: Levine, J. A., "Delaunay Methods for Approximating Geometric Domains", SCI Institute, University of Utah, Salt Lake City, UT (Sep. 2009).

Submitted: Levine, J. A., "Delaunay meshing of isosurfaces", Shape Modeling International, Lyon, France (Jun. 2007).

[***Summary:*** *9 at conferences/workshops, 33 invited.*]

AWARDED GRANTS AND CONTRACTS

Northeastern Center for Inclusive Computing (CIC)
"CIC Implementation Grant"
Role: PI [Co-PI's Adriana Picoral and Melanie Lotz]
Total: $500,000 (Levine's Allocation: 33%)
Jan. 2024 – Dec. 2025

NSF DMR-2242925
"New Frontiers of Sound (NewFoS) Science and Technology Center"
Role: Senior Personnel [lead PI Pierre Deymier (Arizona)]
Total: $29,997,791 (Levine's Allocation: $500,000 (1.67% total))
Sept. 2023 – Aug. 2028

NSF CMMI-2204400
"Collaborative Research: CQIS: A Sound Leap (SouL)"
Role: Co-PI [lead PI Pierre Deymier (Arizona), PI Md Arif Hasan (Wayne State)]
Total: $1,002,548 (Levine's Allocation: $238,287 (40% at UA, 23.8% total))
Nov. 2022 – Oct. 2025

DOE DE-SC-0023319
"Neural Field Processing for Visual Analysis"
Role: PI [lead PI Matthew Berger (Vanderbilt), PI Andrew Gillette (LLNL)]
Total: $1,798,158 (Levine's Allocation: $495,463 (100% at UA, 27.6% total))
Aug. 2022 – Jul. 2025

Northeastern Center for Inclusive Computing (CIC)
"CIC Diagnostics Grant"
Role: PI
Total: $60,000 (Levine's Allocation: 100%)
Jan. 2021 – Dec. 2022

NSF IIS-2006710
"Collaborative Research: III: Small: Neural Volume Visualization"
Role: PI [lead PI Matthew Berger (Vanderbilt)]
Total: $499,351 (Levine's Allocation: $198,898 (100% at UA, 39.8% total))
Aug. 2020 – Jul. 2023

NSF DMS-1913094 (Former UA PI, Andrew Gillette)
"Collaborative Research: Transforming Serendipity Elements from Theory to Practice"
Role: PI [lead PI Robert Kirby (Baylor)]
Total: $299,999 (Levine's Allocation: $132,999 (100% at UA, 44.3% total))
Jul. 2019 – Jun. 2022

DOE DE-SC-0019039 (DOE Early Career Research Program)
"Analyzing Multifaceted Scientific Data with Topological Analytics"
Role: PI
Total: $804,327 (Levine's Allocation: 100%)
Sept. 2018 – Aug. 2023

NVIDIA Corporation (1 year)
"A Student-Centric Approach for a New CUDA Curriculum: A CUDA Teaching Center Proposal"
Role: PI [Co-PI Melissa C. Smith (Clemson), Co-PI Robert M. Geist, III (Clemson)]
Total: $10,656 (Levine's Allocation: 34%)
Jul. 2014 – Jun. 2015

Toyota Racing Development
"Toyota Racing Development Experimental Computing Fund (TRD-EC)"
Role: PI [Co-PI Robert M. Geist, III (Clemson)]
Total: $67,000 (Levine's Allocation: $46,000)
May. 2014 – Dec. 2015

NSF Supplement to CNS-1126344
"REU Supplement to MRI: Development of the Intelligent River: A Basin-Scale Monitoring Instrument"
Role: Co-PI [PI Jason O. Hallstrom (Clemson), Co-PI Gene W. Eidson (Clemson), Co-PI Christopher J. Post (Clemson), Co-PI Julia L. Sharp (Clemson), Co-PI Robert M. Geist, III (Clemson), Co-PI Jerry Tessendorf (Clemson), Co-PI David L. White (Clemson)]
Total: $42,000 (Levine's Allocation: $6,000)
Aug. 2013 – Jul. 2014

NSF IIS-1654221 (previously IIS-1314757)
"HCC: CGV: Large: Collaborative Research: Coupling Simulation and Mesh Generation using Computational Topology"
Role: PI [lead PI Adam Bargteil (UMBC), Co-PI Valerio Pascucci (Utah), PI Tamar Shinar (UC Riverside)]
Total: $1,600,000 (Levine's Allocation: $350,000 (100% at UA/Clemson, 21.9% total))
Aug. 2013 – Jul. 2018

GRADUATE, POSTDOCTORAL, THESIS ADVISORS OR SPONSORS

Postdoctoral: Valerio Pascucci and Ross T. Whitaker (SCI Institute, University of Utah).

Ph.D.: Tamal K. Dey (Purdue University (previously The Ohio State University)).

M.S.: Michael S. Branicky (University of Kansas (previously Case Western Reserve University)).

POSTDOCTORAL ADVISING

Former Postdocs

Matthew Berger, Ph.D. in CS, Nov. 2016 - Jul. 2018.

Chakrit Watcharopas, Ph.D. in CS, Apr. 2014 - Mar. 2016 (Co-Mentor with Donald House).

GRADUATE STUDENT ADVISING

Current Graduate Students

Harshita Narnoli, Ph.D. in CS, Expected 2026.

Tanner Finken, Ph.D. in CS, Expected 2027.

Md Afridi Hasan, M.S. in CS, Expected 2025.

Former Graduate Students

Jixian Li, Ph.D. in CS, "Deep Learning Approaches for Exploring Collections of Visual Features of Scalar Fields," Summer 2022.

Brian Bollen, Ph.D. in Applied Math, "Stable, Discriminative Distances on Reeb Graphs and Merge Trees," Summer 2022.

Kairong Jiang, Ph.D. in CS, "Constructing and Assessing Surrogates for Volume Visualization Using Neural Networks," Summer 2022.

Justin Crum, Ph.D. in Applied Math, "Implementing and Testing Exterior Calculus Discretization Techniques for PDEs," Spring 2022 (Co-Advisor w/ Andrew Gillette).

Simon Swenson, M.S. in CS (Coursework), Spring 2020.

Blase LaSala, M.S. in Mining and Geological Engineering, "Creating a High-Fidelity Interactive Simulation of the Timpanogos Cave System from a Terabyte Scale Terrestrial LiDAR Dataset," Fall 2019 (Co-Advisor w/ John M. Kemeny).

Benafsh Husain, M.S. in CS (Coursework), Spring 2018.

Zhi Zhang, M.S. in CS (Coursework), Fall 2017.

Dachao Sun, M.S. in CS, "Volumetric Seam Carving," Spring 2017.

Zachary Shore, M.S. in CS (Coursework), Summer 2015.

UNDERGRADUATE STUDENT ADVISING

Current Undergraduates

Jake Dylan Balla, B.S. Computer Science, "Visualizations of Phase Computing," 2023.

Former Undergraduates

Alex DeJournett, B.S. Computer Science, "Ray Tracing Point Cloud Data," 2020.

Devin Bayly, B.S. Neuroscience & Cognitive Science, "Mental Landscapes: Using Virtual Reality for Neuroscience Outreach," 2019.

Veronica Reeves-Voeltner, B.S. in Information Science and Technology, "Visualization of LiDAR Scans of Kartchner Caverns using VR," 2017.

Winslow Mohr, B.A. Computer Science, "Visualization and Web UI for LB Flow Simulators," 2016.

Yash Sapra (McMaster University), B.S. Computer Science, "Topic: Visualization Framework for Particle-Based Fracture Simulation," 2015.

Brenden Roberts, B.S. Physics, "REU: Topic: Development of the Intelligent River: Realistic Lighting and Flow Models on the GPU," 2014.

COURSES TAUGHT
(prior to Fall 2016 at Clemson, afterward at Arizona)

CSC 444, Data Visualization, Spring 2024.

CSC 544, Advanced Data Visualization, Fall 2023.

CSC 544, Advanced Data Visualization, Spring 2023.

CSC 296, Special Topics: Cultural Identity in Computing and Engineering, Spring 2023.

CSC 696D, Advanced Topics in Visualization and Graphics, Spring 2022.

CSC 444, Data Visualization, Fall 2021.

CSC 444, Data Visualization, Spring 2021.

CSC 544, Advanced Data Visualization, Fall 2020.

CSC 444, Data Visualization, Spring 2020.

CSC 433/533, Computer Graphics, Fall 2019.

CSC 437/537, Geometric Algorithms, Spring 2019.

CSC 433, Computer Graphics, Fall 2018.

CSC 433/533, Computer Graphics, Spring 2018.

CSC 630, Topological Analysis in Visualization, Fall 2017.

CSC 544, Advanced Data Visualization, Spring 2017.

CPSC 8810, Advanced Visualization, Spring 2016.

CPSC 9500, New PhD Student Seminar, Fall 2015.

CPSC 8040, Data Visualization, Fall 2015.

CPSC 4040/6040, Computer Graphics Images, Fall 2015.

CPSC 1020, Computer Science II, Spring 2015.

CPSC 8810 (converted to CPSC 8040), Data Visualization, Fall 2014.

CPSC 4040/6040, Computer Graphics Images, Fall 2014.

CPSC 4810, Creative Inquiry - Games for Science Education, Spring 2014.

CPSC 8810, Geometric Modeling, Spring 2014.

CPSC 4810, Creative Inquiry - Games for Science Education, Fall 2013.

CPSC 4040/6040, Computer Graphics Images, Fall 2013.

CPSC 481, Creative Inquiry - Games for Science Education, Spring 2013.

CPSC 881, Data Visualization, Spring 2013.

CPSC 404/604, Computer Graphics Images, Fall 2012.

DEPARTMENT AND UNIVERSITY SERVICE
(prior to Fall 2016 at Clemson, afterward at Arizona)

Department: Chair, CS Diversity, Equity, and Inclusion Committee (Spring 2023 – Spring 2024).

Department: Member, Tenure Track Faculty Evaluation Committee (Spring 2023).

Department: Member, Career Track Faculty Evaluation Committee (Spring 2023 – Spring 2024).

Department: Chair, CS Diversity, Equity, and Inclusion Committee (Fall 2020 – Spring 2022).

Department: Member, CS Faculty Recruiting Committee (Fall 2020 – Spring 2021).

Department: At large member, CS Graduate Admission Committee (Fall 2020 – Spring 2021).

Department: Member, CS Department Head Search Committee (Fall 2020 – Spring 2021).

Department: Member, CS Department Head Search Committee (Summer 2020).

Department: Chair, CS Graduate Admission Committee (Fall 2019 – Spring 2020).

Department: Member, CS Graduate Affairs Committee (Fall 2019 – Spring 2020).

Department: Member, CS Graduate Admission Committee (Fall 2016 – Spring 2019).

Department: Member, CS Advisory Committee (Fall 2016 – Spring 2020).

Department: Chair, PhD/CS Curriculum Committee (Director of Graduate Studies) (Fall 2015 – Spring 2016).

Department: Member, Department Advisory Committee (Fall 2015 – Spring 2016).

Department: Member, Search Committee for VC Division Faculty (Fall 2015 – Spring 2016).

Department: Member, Search Committee for DPA Associate Director (Fall 2015 – Spring 2016).

Department: Chair, Graduate Recruiting Committee (Fall 2014 – Spring 2015).

Department: Member, Search Committee for Lecturer in School of Computing (Summer 2015).

Department: Member, Equipment Committee (Fall 2014 – Spring 2015).

Department: Member, Search Committee for the C. Tycho Howle Endowed Chair and Director of the School of Computing (Fall 2013 – Spring 2014).

Department: Member, Graduate Recruiting Committee (Fall 2012 – Spring 2014).

University: Member, Data Science Resources and Training Steering Committee (DSRT-SC) (Spring 2018 – Present).

University: Member, Data Visualization subcommittee of the Research Computing Governance Committee (RCGC-DV) (Spring 2017 – Present).

EXTERNAL SERVICE

Associate Editor, IEEE Transactions on Visualization and Computer Graphics (Nov. 2023 – Present).

Conference Committee Member: Program Co-Chair, IEEE VIS 2023 (Oct. 2023).

Conference Committee Member: Program Co-Chair, IEEE VIS 2022 (Oct. 2022).

Conference Committee Member: Program Co-Chair, IEEE VIS 2021 (Oct. 2021).

Conference Committee Member: Panels Chairs, IEEE VIS 2020 (Oct. 2020).

Conference Committee Member: Panels Chairs, IEEE VIS 2019 (Oct. 2019).

Co-organizer, Topological Analysis of Ensemble Scalar Data with TTK, A Sequel (IEEE VIS 2022 Tutorial) (Oct. 2022).

Co-organizer, Topological Analysis of Ensemble Scalar Data with TTK (IEEE VIS 2021 Tutorial) (Oct. 2021).

Co-organizer, Topological Data Analysis Made Easy with the Topology ToolKit, What is New? (IEEE VIS 2020 Tutorial) (Oct. 2020).

Co-organizer, Topological Data Analysis Made Easy with the Topology ToolKit, A Sequel (IEEE VIS 2019 Tutorial) (Oct. 2019).

Co-organizer, Topological Data Analysis Made Easy with the Topology ToolKit (IEEE VIS 2018 Tutorial) (Oct. 2018).

Co-organizer, VPA17: 4th Workshop on Visual Performance Analysis held concurrently with Supercomputing 2017 (Nov. 2017).

Co-organizer, VPA16: 3rd Workshop on Visual Performance Analysis held concurrently with Supercomputing 2016 (Nov. 2016).

Co-organizer, SIAM Conference on Parallel Processing for Scientific Computing Minisymposium: Visualization of Performance Data on Large Scale Systems and Applications (Feb. 2014).

Co-organizer, VAPLS 2013: Workshop on Visualization and Analysis of Performance on Large-scale Software co-located with IEEE VIS 2013 (Oct. 2013).

Co-organizer, MeshMed 2013: Workshop on Mesh Processing in Medical Image Analysis in conjunction with MICCAI (Sept. 2013).

Co-organizer, MeshMed 2012: Workshop on Mesh Processing in Medical Image Analysis in conjunction with MICCAI (Oct. 2012).

Co-organizer, MeshMed 2011: Workshop on Mesh Processing in Medical Image Analysis in conjunction with MICCAI (Sept. 2011).

Program Committee Member, IEEE VIS 2023 (Oct. 2023).

Program Committee Member, IEEE VIS 2022 (Oct. 2022).

Program Committee Member, IEEE VIS 2021 (Oct. 2021).

Program Committee Member, EuroVis 2021 (June 2021).

Program Committee Member, IEEE PacificVis 2021 (Apr. 2021).

Program Committee Member, LDAV 2020: 10th IEEE Symposium on Large Data Analysis and Visualization held concurrently with IEEE VIS 2020 (Oct. 2020).

Program Committee Member, EuroVis 2020 State of the Art Reports (STAR) (June 2020).

Program Committee Member, EuroVis 2020 (June 2020).

Program Committee Member, IEEE PacificVis 2020 (June 2020).

Program Committee Member, EGPGV 2020: Eurographics Symposium on Parallel Graphics and Visualization (May 2020).

Program Committee Member, LDAV 2019: 9th IEEE Symposium on Large Data Analysis and Visualization held concurrently with IEEE VIS 2019 (Oct. 2019).

Program Committee Member, IEEE VIS 2019: SciVis (Oct. 2019).

Program Committee Member, TopoInVis 2019: Topology-Based Methods in Visualization (June 2019).

Program Committee Member, EuroVis 2019 (June 2019).

Program Committee Member, GMP 2019: Geometric Modeling and Processing (June 2019).

Program Committee Member, EGPGV'19: Eurographics Symposium on Parallel Graphics and Visualization (June 2019).

Program Committee Member, IEEE VIS 2018: SciVis (Oct. 2018).

Program Committee Member, GHC 2018: Interactive Media Track (Sept. 2018).

Program Committee Member, EGPGV'18: Eurographics Symposium on Parallel Graphics and Visualization (June 2018).

Program Committee Member, i3D 2018: ACM SIGGRAPH Symposium on Interactive 3D Graphics and Games (May 2018).

Program Committee Member, IEEE VIS 2017: SciVis (Oct. 2017).

Program Committee Member, VISAP'17: IEEE VIS 2017 Arts Program held concurrently with IEEE VIS 2017 (Oct. 2017).

Program Committee Member, EGPGV'17: Eurographics Symposium on Parallel Graphics and Visualization (June 2017).

Program Committee Member, TopoInVis 2017: Topology-Based Methods in Visualization (Feb. 2017).

Program Committee Member, i3D 2017: ACM SIGGRAPH Symposium on Interactive 3D Graphics and Games (Feb. 2017).

Program Committee Member, LDAV 2016: 6th IEEE Symposium on Large Data Analysis and Visualization held concurrently with IEEE Vis 2016 (Oct. 2016).

Program Committee Member, VISAP'16: IEEE VIS 2016 Arts Program held concurrently with IEEE VIS 2016 (Oct. 2016).

Program Committee Member, EuroVis 2016 (June 2016).

Program Committee Member, GMP 2016: Geometric Modeling and Processing (June 2016).

Program Committee Member, VPA15: 2nd Workshop on Visual Performance Analysis held concurrently with Supercomputing 2015 (Nov. 2015).

Program Committee Member, LDAV 2015: 5th IEEE Symposium on Large Data Analysis and Visualization held concurrently with IEEE Vis 2015 (Oct. 2015).

Program Committee Member, VISAP'15: IEEE VIS 2015 Arts Program held concurrently with IEEE VIS 2015 (Oct. 2015).

Program Committee Member, EuroVis 2015 (June 2015).

Program Committee Member, EuroVis Short Papers 2015 (June 2015).

Program Committee Member, GMP 2015: Geometric Modeling and Processing (June 2015).

Program Committee Member, TopoInVis 2015: Topology-Based Methods in Visualization (May 2015).

Program Committee Member, VPA14: 1st Workshop on Visual Performance Analysis held concurrently with Supercomputing 2014 (Nov. 2014).

Program Committee Member, CompIMAGE 2014: Computational Modeling of Objects Represented in Images: Fundamentals, Methods, and Applications (Sept. 2014).

Program Committee Member, EuroVis 2014 (June 2014).

Program Committee Member, GMP 2014: Geometric Modeling and Processing (June 2014).

Program Committee Member, ACM Symposium on Computational Geometry (SoCG) Video and Multimedia Presentation (June 2011).

Committee Member, Visualization Showcase, SC 2016 (Nov. 2016).

Committee Member, Doctoral Showcase, SC 2015 (Nov. 2015).

Panelist, BPViz 2014: 1st CRA-W/CDC Broadening Participation in Visualization Workshop (Feb. 2014).

Faculty Panelist, Doctoral Colloquium, IEEE VIS 2013 (Oct. 2013).

PUBLICATION REVIEW

Book Manuscripts and Proposals:

CRC Press / Taylor & Francis Group Proposal Review, Nov. 2013.

CRC Press / Taylor & Francis Group Proposal Review, Aug. 2013.

CRC Press / Taylor & Francis Group Proposal Review, Jan. 2013.

A.K. Peters / CRC Press Manuscript Review, Jul. 2012.

Journal Articles:

IEEE Trans. on Visualization and Computer Graphics (TVCG): Oct. 2023, Sep. 2023, Jul. 2023, Mar. 2023 (2), Nov. 2022, Nov. 2021, Oct. 2021 (2), Feb. 2021, Dec. 2020, Sep. 2020 (2), Aug. 2020, May 2020, Sep. 2019, Jun. 2019, Apr. 2019, Sep. 2018 (2), Sep. 2017 (2), May 2017, Dec. 2016, Sep. 2016, Aug. 2016, Feb. 2016, Oct. 2015, Sep. 2015, Nov. 2014, Dec. 2012, Sep. 2012, Mar. 2012.

ACM Trans. on Graphics (TOG): Oct. 2019, Jul. 2018, Aug. 2011.

Computer Graphics Forum (CGF): Jul. 2023, Feb. 2014, Feb. 2013, Oct. 2012, Aug. 2012, Mar. 2012, Sep. 2011.

IEEE Computer Graphics and Applications: Nov. 2013.

Computers and Graphics (CAG): Jan. 2015, Nov. 2013, Sep. 2013, Jul. 2013, Oct. 2012, Jul. 2012, Jun. 2012, Feb. 2012, Dec. 2011, Oct. 2011.

ACM Trans. on Mathematical Software (TOMS): Aug. 2023.

Computer-Aided Design (CAD): May 2016, Jan. 2016, Jan. 2015, Apr. 2014, Apr. 2013, Feb. 2013, Aug. 2012, Apr. 2012 (2), Jan. 2012, Dec. 2011, Oct. 2011 (2), Aug. 2011, Jul. 2011 (2), Jun. 2011, May 2011 (2), Mar. 2011, Feb. 2011, Nov. 2011, Sep. 2010 (2), Jul. 2010, Apr. 2010, Jan. 2010.

Computer Aided Geometric Design (CAGD): May 2016, Mar. 2016, Nov. 2015, Apr. 2011 (2),

Engineering with Computers (EWCO): May 2014, May 2013, Jul. 2012, Feb. 2011, Nov. 2009.

IEEE Trans. on Parallel and Distributed Systems (TPDS): Mar. 2024.

IEEE Trans. on Medical Imaging (TMI): Apr. 2012, Sep. 2012.

IEEE Trans. on Image Processing (TIP): Sep. 2015, Jan. 2015, Jul. 2014.

Graphical Models (GMOD): Sep. 2018, Aug 2017, Apr 2017, Mar 2015.

Communications of the ACM (CACM): Feb. 2023.

ACM Transactions on Computing Education (TOCE): May 2019.

Journal of Computer Science and Technology (JCST): Apr. 2011.

Advanced Modeling and Simulation in Engineering Sciences (AMSES): Oct. 2013.

MDPI Algorithms: Jan. 2015.

Computational Geometry: Theory and Application (CGTA): Nov. 2019.

[***Summary:*** *19 unique journals, 108 total reviews.*]

Conference and Workshop Proceedings:

IEEE Visualization: May 2023 (5), May 2022 (4), May 2021 (5), June 2020 (5), May 2019 (5), May 2018 (6), May 2017 (7), May 2016 (11), May 2015 (9), May 2014 (5), May 2013 (6), May 2012 (6), May 2011 (4), May 2010 (3).

ACM SIGGRAPH: Mar. 2023, Mar. 2020, Mar. 2019, Mar. 2017, Mar. 2016 (2), Mar. 2015, Mar. 2010.

EuroVis: Jan. 2024 (1), Jan. 2021 (4), Jan. 2020 (5), Jan. 2019 (5), Jan. 2018 (2), Jan. 2017 (4), Jan. 2016 (5), Jan. 2015 (4), Jan. 2014 (3), Jan. 2013 (5), Jan. 2012 (4), Jan. 2011 (3).

SciVis, Short Papers: Jul. 2018 (2).

EuroVis, Short Papers: Mar. 2015 (3).

EuroVis, STAR Reports: Feb. 2020, Oct. 2019 (2).

International Meshing Roundtable (IMR): Jul. 2017 (2), Jul. 2016 (3), Jul. 2015 (5), Jul. 2014 (3), Jul. 2013 (4), Jul. 2012 (2), Jul. 2011 (5), Jul. 2010 (2).

ACM SIGGRAPH Asia: Jul. 2023 (2), Jul. 2020, Jul. 2017, Jul. 2016 (2), Jul. 2015 (2), Jul. 2012, Jul. 2010.

Eurographics: Nov. 2015, Nov. 2013.

IEEE Pacific Visualization: Dec. 2020 (2), Nov. 2019 (5), Nov. 2018 (4), Nov. 2017 (2), Nov. 2016 (3), Nov. 2011 (3), Nov. 2010.

IEEE Symposium on Large Data Analysis and Visualization (LDAV): Jul. 2021 (2), Aug. 2020 (2), Jul. 2019 (3), Jul. 2016, Jul. 2015 (3).

Workshop on Topology-Based Methods in Visualization (TopoInVis): July 2022 (2), May 2019 (3), Jan. 2017 (3), Feb. 2015 (3).

Eurographics Symposium on Parallel Graphics and Visualization (EGPGV): Apr. 2020 (3), Nov. 2019 (1), Apr. 2019 (3), Dec. 2018 (2), Apr. 2018 (2), Jan. 2018 (2), Apr. 2017 (2).

ACM SIGGRAPH Symposium on Interactive 3D Graphics and Games (i3D): Feb. 2018 (4), Nov. 2016 (6).

Pacific Graphics (PG): Jun. 2012, Jun. 2011, Jun. 2009.

ACM/SIAM Geometric Design and Solid & Physical Modeling (GDSPM): May 2011 (3).

Symposium on Computational Geometry (SoCG): Jan. 2024, Jan. 2019, Jan. 2012.

Computer Graphics International (CGI): Mar. 2014.

Geometric Modeling and Processing (GMP): Jan. 2019 (5), Dec. 2016 (5), Jan. 2015 (3), Jan. 2014 (4).

Computational Modeling of Objects Presented in Images: Fundamentals, Methods, and Applications (CompIMAGE): Apr. 2014 (2).

Scandinavian Conference on Image Analysis (SCIA): Feb. 2015 (2).

European Symposium on Algorithms (ESA): May 2010.

SIBGRAPI: May 2010 (2).

IEEE Symposium on Biological Data Visualization (BioVis): Jun. 2013, Jun. 2011.

MeshMed: Workshop on Mesh Processing in Medical Image Analysis: Jul. 2013 (3), Jul. 2012 (3), Jul. 2011 (4).

VPA: Workshop on Visual Performance Analysis: Sep. 2018 (2), Sep. 2015 (2), Sep. 2014 (4).

ProTools: Workshop on Programming and Performance Visualization Tools: Sep. 2020 (2), Sep. 2019 (4).

[***Summary:*** *27 unique venues, 307 total reviews.*]

MEMBERSHIPS

Member, Association for Computing Machinery, ACM (2010 –).

Member, Institute of Electrical and Electronics Engineers Computer Society, IEEE CS (2006 –).

Member, Society for Industrial and Applied Mathematics, SIAM (2014 – 2016).

Prepared April 23, 2024.