

Han-Wei Shen

Professor

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Professional Preparation

National Taiwan University, Taiwan	Computer Science	BS, 1988
State University of New York, Stony Brook	Computer Science	MS, 1992
University of Utah	Computer Science	PhD, 1998

Appointments

- Professor, Computer Science and Engineering, The Ohio State University 2012-present
- Associate Professor, Computer Science and Engineering, The Ohio State University 2005-2012
- Assistant Professor, Computer Science and Engineering, The Ohio State University 1999-2005
- Visiting Scientist, Argonne National Laboratory 10/08-6/09
- Research Scientist, NASA Ames Research Center 9/96-8/99
- Visiting Scientist, NASA Langley Research Center 2/96-3/96, 6/97-7/97

Awards

- Inductee, IEEE Visualization Academy
- OSU College of Engineering Lumley Interdisciplinary Research Award, 2018
- OSU Ruth and Joel Spiral Award for Excellence in Teaching, 2014
- CSE Outstanding Teaching Award, 2002, 2009
- NSF CAREER Award, 2004
- DOE Early Career Principle Investigator Award, 2003
- OSU College of Engineering Lumley Research Award, 2004, 2011
- Ameritech Faculty Fellow, 2002

Professional Activities

- Editor-in-Chief, IEEE Transactions on Visualization and Computer Graphics, 2023-Present
- Associate Editor-in-Chief, IEEE Transactions on Visualization and Computer Graphics, 2019-2022
- Associate Editor, IEEE Transactions on Visualization and Computer Graphics 2008-2012
- Visualization Executive Committee (VEC), IEEE Visualization, 2015-2020
- Chair, IEEE SciVis Steering Committee, 2018-2010; Member, 2014-2020
- Chair, IEEE SciVis Test of Time Award Committee, 2017, 2018
- Chair, IEEE VGTC Best Doctoral Dissertation Award, 2018
- Paper Co-Chair, IEEE SciVis 2013, 2014, 2020
- Best Paper Committee, IEEE SciVis 2017, ChinaVis 2018, IEEE Pacific Vis 2020
- Associate Editor, Journal of Visualization
- Program Co-Chair, IEEE Visualization 2008, 2009
- Paper Co-Chair, IEEE Pacific Visualization 2009, 2010
- Program Co-Chair, IEEE/ACM Symposium on Parallel Visualization and Graphics 1999

- Program Co-Chair, Eurographics Symposium on Parallel Graphics and Visualization 2004
- Program Committee, IEEE Visualization
- Program Committee, IEEE Cluster, IEEE/ACM Supercomputing
- Program Committee, Eurographics Symposium on Visualization
- Program Committee, Pacific Graphics, Volume Graphics
- Program Committee, Eurographics Symposium on Parallel Graphics and Visualization
- Program Committee, IEEE Pacific Visualization
- Program Committee, International Symposium on Visual Computing

Journal Publications

1. Xiaoqi Wang and Han-Wei Shen. "GNNInterpreter: A Probabilistic Generative Model-Level Explanation For Graph Neural Networks." *In International Conference on Learning Representations (ICLR), 2023.*
2. Hong-You Chen, Cheng-Hao Tu, Ziwei Li, Han-Wei Shen, and Wei-Lun Chao. "On the Importance and Applicability of Pre-Training for Federated Learning." *In International Conference on Learning Representations (ICLR), 2023.*
3. Skylar W Wurster, Hanqi Guo, Tom Peterka, Han-Wei Shen. "Neural Stream Functions." *In Proceedings of PacificVis 2023.*
4. Yamei Tu, Olga Li, Junpeng Wang, Han-Wei Shen, Przemek Powalko, Irina Tomescu-Dubrow, Kazimierz M. Slomczynski, Spyros Blanas, and J. Craig Jenkins. SDRQuerier: A Visual Querying Framework for Cross-National Survey Data Recycling. *IEEE Transactions on Visualization and Computer Graphics (Proc. IEEE PacificVis 2023).*
5. Tu, Yamei, Rui Qiu, Yu-Shuen Wang, Po-Yin Yen, and Han-Wei Shen. PhraseMap: Attention-Based Keyphrases Recommendation for Information Seeking. *IEEE Transactions on Visualization and Computer Graphics (2022).*
6. Skylar W. Wurster, Hanqi Guo, Han-Wei Shen, Tom Peterka, Jiayi Xu. Deep Hierarchical Super Resolution for Scientific Data. *IEEE Transactions on Visualization and Computer Graphics (2022) (Early Access)*
7. Rui Qiu, Yamei Tu, Yu-Shuen Wang, Po-Yin Yen, Han-Wei Shen. DocFlow. A Visual Analytics System for Question-based Document Retrieval and Categorization. *IEEE Transactions on Visualization and Computer Graphics 2022*
8. Haoyu Li, Junpeng Wang, Yan Zheng, Liang Wang, Wei Zhang, and Han-Wei Shen. Compressing and Interpreting Word Embeddings with Latent Space Regularization and Interactive Semantics Probing, *Information Visualization 2022*
9. Neng Shi, Jiayi Xu, Haoyu Li, Hanqi Guo, Jonathan Woodring, and Han-Wei Shen. VDL-Surrogate: A View-Dependent Latent-based Model for Parameter Space Exploration of Ensemble Simulations, *IEEE Transactions on Visualization and Computer Graphics (Proc. IEEE VIS 2022) [Best Paper Honorable Mention Award at IEEE VIS 2022]*
10. Jingyi Shen, Haoyu Li, Jiayi Xu, Ayan Biswas, and Han-Wei Shen. IDLat. An Importance-Driven Latent Generation Method for Scientific Data, *IEEE Transactions on Visualization and Computer Graphics (Proc. IEEE VIS 2022)*
11. Haoyu Li and Han-Wei Shen. Local Latent Representation based on Geometric Convolution for Particle Data Feature Exploration, *IEEE Transactions on Visualization and Computer Graphics (2022) (Early Access)*

12. Jiayi Xu, Hanqi Guo, Han-Wei Shen, Mukund Raj, Skylar W. Wurster, Tom Peterka. Reinforcement Learning for Load-balanced Parallel Particle Tracing, *IEEE Transactions on Visualization and Computer Graphics* (2022) (Early Access)
13. Neng Shi, Jiayi Xu, Skylar W. Wurster, Hanqi Guo, Jonathan Woodring, Luke Van Roekel, and Han-Wei Shen. GNN-Surrogate. A Hierarchical and Adaptive Graph Neural Network for Parameter Space Exploration of Unstructured-Mesh Ocean Simulations, *IEEE Transactions on Visualization and Computer Graphics* (2022) (Early Access)
14. Jiayi Xu, Hanqi Guo, Han-Wei Shen, Mukund Raj, Xueyun Wang, Xueqiao Xu, Zhehui Wang, Tom Peterka. Asynchronous and Load-Balanced Union-Find for Distributed and Parallel Scientific Data Visualization and Analysis, *IEEE Transactions on Visualization and Computer Graphics* 27 (6), 2808-2820 (2021) [**Best Paper Award at IEEE PacificVis 2021**]
15. Hanqi Guo, David Lenz, Jiayi Xu, Xin Liang, Wenbin He, Iulian R. Grindeanu, Han-Wei Shen, Tom Peterka, Todd Munson, Ian Foster. FTK: A Simplicial Spacetime Meshing Framework for Robust and Scalable Feature Tracking, *IEEE Transactions on Visualization and Computer Graphics* 27 (8): 3463-3480 (2021)
16. Jian Chen, Meng Ling, Rui Li, Petra Isenberg, Tobias Isenberg, Michael Sedlmair, Torsten Moller, Robert S. Laramée, Han-Wei Shen, Katharina Wunsche, Qiru Wang. VIS30K: A Collection of Figures and Tables from IEEE Visualization Conference Publications, *IEEE Transactions on Visualization and Computer Graphics* (2021) (Early Access)
17. Xiaoqi Wang, Kevin Yen, Yifan Hu, Han-Wei Shen. DeepGD: A Deep Learning Framework for Graph Drawing Using GNN, *IEEE Computer Graphics and Applications* (2021) (Early Access)
18. Yifei An, Han-Wei Shen, Guihua Shan, Guan Li, Jun Liu. STSRNet. Deep Joint Space-Time Super-Resolution for Vector Field Visualization, *IEEE Computer Graphics and Applications* (2021) (Early Access)
19. Xiaoyang Han, Han-Wei Shen, Guan Li, Xuyi Lu, Guihua Shan, and Yangang Wang. IVDAS. an interactive visual design and analysis system for image data symmetry detection of CNN models, *Journal of Visualization* 24, no. 3 (2021): 615-629.
20. Shiyu Cheng, Hanwei Shen, Guihua Shan, Beifang Niu, and Weihua Bai. Visual analysis of meteorological satellite data via model-agnostic meta-learning, *Journal of Visualization* 24, no. 2 (2021): 301-315
21. Jiayi Xu, Soumya Dutta, Wenbin He, Joachim Moortgat, and Han-Wei Shen. Geometry-Driven Detection, Tracking and Visual Analysis of Viscous and Gravitational Fingers, *IEEE Transactions on Visualization and Computer Graphics* 28 (3): 1514-1528
22. Guan Li, Junpeng Wang, Han-Wei Shen, Kaixin Chen, Guihua Shan, and Zhonghua Lu. CNNPruner: Pruning Convolutional Neural Networks with Visual Analytics, *IEEE Transactions on Visualization and Computer Graphics* (2020) (Early Access)
23. Zhehui Wang, Jiayi Xu, Yao E. Kovach, Bradley T. Wolfe, Edward Thomas Jr, Hanqi Guo, John E. Foster, and Han-Wei Shen. Microparticle cloud imaging and tracking for data-driven plasma science, *Physics of Plasmas* 27, no. 3 (2020): 033703
24. Kaixin Chen, Yang Wang, Minzhu Yu, Han-Wei Shen, Xiaomin Yu, and Guihua Shan. ConfVisExplorer: a literature-based visual analysis system for conference comparison, *Journal of Visualization* (2020): 1-15
25. Hank Childs et al.. A terminology for in situ visualization and analysis systems, *The International Journal of High Performance Computing Applications* (2020): 1094342020935991.
26. Wenbin He, Junpeng Wang, Hanqi Guo, Ko-Chih Wang, Han-Wei Shen, Mukund Raj, Youssef SG Nashed, and Tom Peterka. InSituNet: Deep Image Synthesis for Parameter Space Exploration of Ensemble Simulations, *IEEE Transactions on Visualization and Computer Graphics* 26 (1), 23-33 (2020), [**Best Paper Award at IEEE VIS 2019**]

27. Subhashis Hazarika, Haoyu Li, Ko-Chih Wang, Han-Wei Shen, and Ching-Shan Chou. NNVA: Neural Network Assisted Visual Analysis of Yeast Cell Polarization Simulation, *IEEE Transactions on Visualization and Computer Graphics* 26 (1), 34-44 (2020), **[Best Paper Honorable Mention Award at IEEE VIS 2019]**
28. Wenbin He, Hanqi Guo, Han-Wei Shen, Tom Peterka: eFESTA. Ensemble Feature Exploration with Surface Density Estimates. *IEEE Trans. Vis. Comput. Graph.* 26(4): 1716-1731 (2020)
29. Jingyi Shen, Runqi Wang, Han-Wei Shen. Visual exploration of latent space for traditional Chinese music. *Visual Informatics* 4(2): 99-108 (2020)
30. Wenbin He, Junpeng Wang, Hanqi Guo, Han-Wei Shen, Tom Peterka. CECAV-DNN: Collective Ensemble Comparison and Visualization using Deep Neural Networks. *Visual Informatics* 4(2): 109-121 (2020)
31. Piyush Chawla, Subhashis Hazarika, Han-Wei Shen. Token-wise sentiment decomposition for ConvNet: Visualizing a sentiment classifier. *Vis. Informatics* 4(2): 132-141 (2020)
32. Junpeng Wang, Xiaotong Liu, Han-Wei Shen. High-dimensional data analysis with subspace comparison using matrix visualization. *Information Visualization* 18(1) (2019)
33. Yang Wang, Minzhu Yu, Guihua Shan, Han-Wei Shen, Zhonghua Lu. VISPubCOMPAS: a comparative analytical system for visualization publication data. *Journal of Visualization*, 22(5): 941-953 (2019)**[Best Paper ChinaVis 2019]**
34. Junpeng Wang, Liang Gou, Wei Zhang, Hao Yang, Han-Wei Shen. DeepVID: Deep Visual Interpretation and Diagnosis for Image Classifiers via Knowledge Distillation, *IEEE Transactions on Visualization and Computer Graphics* 25 (6), 2168-2180
35. Xiaonan Ji, Han-Wei Shen, Raghu Machiraju, Alan Ritter, and Po-Yin Yen. Visual Exploration of Neural Document Embedding in Information Retrieval: Semantics and Feature Selection, *IEEE Transactions on Visualization and Computer Graphics* 25 (6), 2181-2192
36. Subhashis Hazarika, Soumya Dutta, Han-Wei Shen, Jen-Peng Chen. CoDDA: A Flexible Copula-based Distribution Driven Analysis Framework for Large-Scale Multivariate Data , *IEEE Transactions on Visualization and Computer Graphics* 25 (1), 1214-1224 (2019)
37. Junpeng Wang, Subhashis Hazarika, Cheng Li, and Han-Wei Shen. Visualization and visual analysis of ensemble data: A survey, *IEEE Transactions on Visualization and Computer Graphics* 25 (9), 2853-2872 (2019)
38. Hanqi Guo, Wenbin He, Sangmin Seo, Han-Wei Shen, and Tom Peterka. Extreme-scale stochastic particle tracing for uncertain unsteady flow analysis, *IEEE Transactions on Visualization and Computer Graphics* 25 (9), 2710-2724 (2019)
39. Ko-Chih Wang, Tzu-Hsuan Wei, Naeem Shareef, and Han-Wei Shen. Ray-based Exploration of Large Time-varying Volume Data Using Per-ray Proxy Distributions, *IEEE Transactions on Visualization and Computer Graphics*, 2019 (Early Access)
40. Hanqi Guo, Wenbin He, Sangmin Seo, Han-Wei Shen, Emil Mihai Constantinescu, Chunhui Liu, and Tom Peterka. Extreme-Scale Stochastic Particle Tracing for Uncertain Unsteady Flow Visualization and Analysis , *IEEE Transactions on Visualization and Computer Graphics*, 2018 (Early Access)
41. Junpeng Wang, Liang Gou, Han-Wei Shen, Hao Yang. DQNViz: A Visual Analytics Approach to Understand Deep Q-Networks, *IEEE Transactions on Visualization and Computer Graphics*, (Accepted at IEEE VAST 2018) **[Best Paper Honorable Mention Award]**

42. Junpeng Wang, Subhashis Hazarika, Cheng Li, Han-Wei Shen. Visualization and Visual Analysis of Ensemble Data: A Survey, *IEEE Transactions on Visualization and Computer Graphics*, 2018 (Early Access)
43. Subhashis Hazarika, Soumya Dutta, Han-Wei Shen, Jen-Peng Chen. CoDDA: A Flexible Copula-based Distribution Driven Analysis Framework for Large-Scale Multivariate Data , *IEEE Transactions on Visualization and Computer Graphics* , (Accepted at IEEE SciVis 2018)
44. Subhashis Hazarika, Ayan Biswas, Han-Wei Shen. Uncertainty Visualization Using Copula-Based Analysis in Mixed Distribution Models, *IEEE Transactions on Visualization and Computer Graphics* , 24(1): 934-943 (2018)
45. Junpeng Wang, Liang Gou , Hao Yang, and Han-Wei Shen. GANViz: A Visual Analytics Approach to Understand the Adversarial Game, *IEEE Transactions on Visualization and Computer Graphics*, 24 (6), 1905-1917 (2018) [*IEEE PacificVis 2018 Best Paper Award*]
46. Subhashis Hazarika, Ayan Biswas, Soumya Dutta, and Han-Wei Shen. Information Guided Exploration of Scalar Values and Isocontours in Ensemble Datasets, *Entropy* 2018, 20(7), 540 .
47. Junpeng Wang, Xiaotong Liu, Han-Wei Shen, Guang Lin. Multi-Resolution Climate Ensemble Parameter Analysis with Nested Parallel Coordinates Plots. *IEEE Trans. Vis. Comput. Graph.* 23(1): 81-90 (2017)
48. Soumya Dutta, Chun-Ming Chen, Gregory Heinlein, Han-Wei Shen, Jen-Ping Chen. In Situ Distribution Guided Analysis and Visualization of Transonic Jet Engine Simulations. *IEEE Trans. Vis. Comput. Graph.* 23(1): 811-820 (2017)
49. Ayan Biswas, Guang Lin, Xiaotong Liu, Han-Wei Shen. Visualization of Time-Varying Weather Ensembles across Multiple Resolutions. *IEEE Trans. Vis. Comput. Graph.* 23(1): 841-850 (2017)
50. Xin Tong, Cheng Li, Han-Wei Shen. GlyphLens: View-Dependent Occlusion Management in the Interactive Glyph Visualization. *IEEE Trans. Vis. Comput. Graph.* 23(1): 891-900 (2017)
51. Hanqi Guo, Wenbin He, Tom Peterka, Han-Wei Shen, Scott M. Collis, and Jonathan J. Helmus. Finite-Time Lyapunov Exponents and Lagrangian Coherent Structures in Uncertain Unsteady Flows. *IEEE Transactions on Visualization and Computer Graphics*. Vol. 22, no. 6. (Feb. 2016): 1672-1682.
52. Chen, Chun-Ming, Dutta, Soumya, liu, Xiaotong, Heinlein, Gregory, Shen, Han-Wei and Chen, Jen-Ping. Visualization and Analysis of Rotating Stall for Transonic Jet Engine Simulation. *IEEE Transactions on Visualization and Computer Graphics*. Vol. 22, no. 1. (Jan. 2016): 847-856.
53. Dutta, Soumya and Shen, Han-Wei. Distribution Driven Extraction and Tracking of Features for Time-varying Data Analysis. *IEEE Transactions on Visualization and Computer Graphics*. Vol. 22, no. 1. (Jan. 2016): 837-836.
54. Liu,Xiaotong; Shen,Han-Wei. Association Analysis for Visual Exploration of Multivariate Scientific Data Sets. *IEEE Transactions on Visualization and Computer Graphics*. Vol. 22, no. 1. (Jan. 2016): 955-964.
55. Tong Xin John Edwards, Chun-Ming Chen, Han-Wei Shen, Chris R. Johnson, and Pak Chung Wong. View-Dependent Streamline Deformation and Exploration. *IEEE Transactions on Visualization and Computer Graphics*. Vol. 22, no. 7. (Nov. 2015):1788-1801.
56. Xiaotong Liu, Han-Wei Shen, Yifan Hu. Supporting multifaceted viewing of word clouds with focus+context display. *Information Visualization*. Vol. 14, no. 2. (Apr.2015):168-180.
57. Abon Chaudhuri, Teng-Yok Lee, Han-Wei Shen, Rephael Wenger. Exploring FLOW Fields Using Space-Filling Analysis of Streamlines. *IEEE Transactions on Visualization and Computer Graphics*. Vol. 20, no. 10, (Oct. 2014): 1392-1404.
58. Zhang,L; Deng,Q; Machiraju,R; et al. Boosting Techniques for Physics-Based Vortex Detection. *COMPUTER GRAPHICS FORUM*. Vol. 33, no. 1. (Feb. 2014): 282-293.

59. BISWAS, A., DUTTA, S., SHEN, H.-W., AND WOODRING, J. An information-aware framework for exploring multivariate data sets. *IEEE Transactions on Visualization and Computer Graphics*. Vol. 19, no. 12. (Oct. 2013): 2683-2692.
60. LEE, T.-Y., AND SHEN, H.-W. Efficient local statistical analysis via integral histograms with discrete wavelet transform. *IEEE Transactions on Visualization and Computer Graphics*. Vol. 19, no. 12. (Oct. 2013): 2693-2702.
61. Lee, Teng-Yok Lee, Tong, Xin, Shen, Han-Wei, Wong, Pak Chung, Hagos, Samson, Leung, Ruby. Feature Tracking and Visualization of Madden-Julian Oscillation in Climate Simulation. *IEEE Computer Graphics and Applications*. 2013, Vol. 33, no. 4. (Jul. 2013):29-37.
62. Kerwin, T, Stredney, D, Wiet, G, Shen, Han-Wei. Virtual mastoidectomy performance evaluation through multi-volume analysis. *Int. J. Computer Assisted Radiology and Surgery*. Vol. 8, no. 1. (Jan. 2013): 51-61.
63. Wong, P, Shen, Han-Wei, Johnson, C.R., Chen, C, Ross, R. The Top 10 Challenges in Extreme-Scale Visual Analytics. *IEEE Computer Graphics and Applications*. Vol. 32, no. 4. (Jul. 2012): 63-67.
64. Wong, P, Shen, Han-Wei, Pascucci, V. Extreme-Scale Visual Analytics. *IEEE Computer Graphics and Applications*. Vol. 32, no. 4. (Jul. 2012): 23-35.
65. Kun-Chuan Feng, Chaoli Wang, Han-Wei Shen, Tong-Yee Lee. Coherent Time-Varying Graph Drawing with Multi-Focus+Context Interaction. *IEEE Transactions on Visualization and Computer Graphics*. Vol. 18, no. 8 (Aug. 2012): 1330-1342.
66. Boonthanome Nouanesengsey, Teng-Yok Lee, Han-Wei Shen. Load Balanced Parallel Streamline Generation on Large Scale Vector Field. *IEEE Transactions on Visualization and Computer Graphics*. Vol. 17, no. 6. (Oct. 2011): 1765-1974.
67. Hsieh,Hsien-Hsi; Chang,Chin-Chen; Tai,Wen-Kai; et al. Novel Geometrical Voxelization Approach with Application to Streamline. *Journal of Computer Science and Technology*. Vol. 5, no. 25. (Jan. 2011): 895-904.
68. Wang,Chaoli; Shen,Han-Wei. Information Theory in Scientific Visualization. *Entropy*. Vol. 1, no. 13. (Jan. 2011): 254-273.
69. Lijie Xu,Teng-Yok Lee and Han-Wei Shen. An information Theoretic Framework for Flow Visualization. *IEEE Transactions on Visualization and Computer Graphics*. Vol. 6, no. 16. (Oct. 2010): 1216-1224.
70. Ahrens,James; Shen,Han-Wei. Ultrascale Visualization. *IEEE COMPUTER GRAPHICS AND APPLICATIONS*. Vol.30, no. 3. (May 2010): 20-21.
71. Teng-Yok Lee and Han-Wei Shen. Visualization and Exploration of Temporal Trend Relationships in Multivariate Time-Varying Data,. *IEEE Transactions on Visualization and Computer Graphics*. Vol. 15, no. 6 (Nov. 2009):1359-1366.
72. Thomas Kerwin, Han-Wei Shen and Don Stredney. Enhancing Realism of Wet Surfaces in Temporal Bone Surgical Simulation,. *IEEE Transactions on Visualization and Computer Graphics*. Vol. 15, no. 5. (Aug. 2009): 747-759.
73. Firdaus Janoos, Boonth Nouanesengsy, Raghu Machiraju, Han-Wei Shen, and Steffen Sammet, Michael Knopp, andIstvan Morcz,. Visual Analysis of Brain Activity from fMRI Data. *Computer Graphics Forum*. Vol. 28, no. 3. (Jan. 2009):904-910.
74. Jonathan Woodring and Han-Wei Shen. Multi-scale Time Activity Data Exploration via Temporal Clustering Visualization Spreadsheet. *IEEE Transactions on Visualization and Computer Graphics*. Vol. 15, no. 1. (Jan. 2009): 123-137.
75. Jonathan Woodring and Han-Wei Shen. Semi-Automatic Time-Series Transfer Functions via Temporal Clustering and Sequencing. *Computer Graphics Forum*. Vol. 28, no. 3. (Jan. 2009): 791-798.

76. Ying Tu and Han-Wei Shen. Balloon Focus, A Seamless Multi Focus+Context Technique for Treemaps. *IEEE Transactions on Visualization and Computer Graphics*. Vol. 14, no. 6. (Oct. 2008): 1157-1164.
77. Thomas Kerwin, Gregory Wiet, Don Stredney, and Han-Wei Shen. Automatic Scoring of Virtual Mastoidectomies Using Examples. *International Journal of Computer Assisted Radiology and Surgery*. Vol. 7, no. 1. (May 2011):1-11.
78. Han-Wei Shen. Interacting with Tree Dimensional Flow Fields. *ACM SIGGRAPH, Computer Graphics quarterly*. Vol. 42, no. 2. (Jan 2008)
79. Hsien-Hsi Hsieh, Liya Li, Han-Wei Shen, and Wen-Kai Tai. A Volume Rendering Framework for Visualization 3D Flow Fields. *Journal of Fluid Science and Technology*. Vol. 3, no. 4. (Jan. 2008).
80. Yuan Hong and Han-Wei Shen. Parallel Reflective Symmetry Transformation for Volume Data. *Computers & Graphics*. Vol. 32, no. 1. (Jan. 2008): 41-48.
81. Chaoli Wang, Antonio Garcia, and Han-Wei Shen. Interactive Level-of-Detail Selection Using Image-Based Quality Metric for Large Volume Visualization. *IEEE Transactions on Visualization and Computer Graphics*. Vol. 13, no. 1. (Jan. 2007): 122-132.
82. Liya Li and Han-Wei Shen. Imaged Based Streamline Generation and Rendering. *IEEE Transactions on Visualization and Computer Graphics*. Vol. 13, no. 3. (Jan. 2007): 630-640.
83. Woodring,Jonathan; Shen,Han-Wei. Incorporating highlighting animations into static visualizations. *VISUALIZATION AND DATA ANALYSIS 2007*. Vol. 6495, (Jan. 2007)
84. Ying Tu and Han-Wei Shen. Visualizing Changes of Hierarchical Data using Treemaps. *IEEE Transactions on Visualization and Computer Graphics*. Vol. 13, no. 6. (Jan. 2007): 1286-1293.
85. Chaoli Wang and Han-Wei Shen,. LOD Maps, A Visual Interface for Navigating Multiresolution Volume Visualization. *IEEE Transactions on Visualization and Computer Graphics*. Vol. 12, no. 5. (Jan. 2006): 1029-1037.
86. Guangfeng Ji and Han-Wei Shen. Dynamic View Selection for Time-varying Volumes. *IEEE Transactions on Visualization and Computer Graphics*,. Vol. 12, no. 5. (Jan. 2006):1109-1117.
87. Jonathan Woodring and Han-Wei Shen. Multi-variate, Time-varying, and Comparative Visualization with Contextual Cues. *IEEE Transactions on Visualization and Computer Graphics*. Vol. 12, no. 5. (Jan. 2006): 1109-1117.
88. Antonio Garcia and Han-Wei Shen. GPU-based 3D Wavelet Reconstruction with Tileboarding. *The Visual Computer*. Vol. 21, no. 8. (Jan. 2005): 755-763.
89. Jinzhu Gao, Chaoli Wang, Liya Li, and Han-Wei Shen. A Parallel Mult-resolution Volume Rendering Algorithm for Large Data Visualization. *Journal of Parallel Computing*. Vol. 31, no. 2. (Jan. 2005): 185-204.
90. Udeeptha Bordoloi, David Kao, and Han-Wei Shen. Visualization Techniques for Spatial Probability Density Function Data. *Journal of Parallel Computing*. Vol. 3, (Jan. 2005): 153-162.
91. Han-Wei Shen, Guo-Shi Li, and Udeeptha Bordoloi. Interactive Visualization of Three-Dimensional Vector Fields with Flexible Appearance Control. *IEEE Transactions on Visualization and Computer Graphics*. Vol. 10, no. 4. (Jan. 2004):434-446.
92. Udeeptha Bordoloi and Han-Wei Shen. Hardware Accelerated Interactive Vector Field Visualization: A Level of Detail Approach. *Computer Graphics Forum*. Vol. 21, no. 3. (Jan. 2002): 605-614.
93. Han-Wei Shen and David L. Kao. A New Line Integral Convolution Algorithm for Visualizing Unsteady Flows. *IEEE Transactions on Visualization and Computer Graphics*. Vol. 4, no. 2. (Jan. 1998): 98-108.
94. Han-Wei Shen. Using Line Integral Convolution to Visualize Dense Vector Fields. *Computers in Physics*. Vol. 11, no. 5. (Jan. 1997): 474-480.
95. Y. Livnat, Han-Wei Shen, and C.R. Johnson. A Near Optimal Isosurface Extraction Algorithm Using the Span Space. *IEEE Transaction on Visualization and Computer Graphics*. Vol. 2, no. 1. (Jan. 1996): 73-84.

Conference Publications

1. Haoyu Li, Tianyu Xiong, and Han-Wei Shen: Efficient Interpolation-based Pathline Tracing with B-spline Curves in Particle Dataset, 2022 IEEE Visualization Conference (VIS) Short Paper.
2. Yamei Tu, Jiayi Xu, Han-Wei Shen: KeywordMap: Attention-based Visual Exploration for Keyword Analysis, Pacific Visualization Symposium (PacificVis), 2021 IEEE, 206-215
3. Jingyi Shen, Han-Wei Shen: An Information-theoretic Visual Analysis Framework for Convolutional Neural Networks, In Proceedings of Smart Tools and Apps for Graphics (STAG) - Eurographics Italian Chapter Conference, 2021
4. Dmitriy Morozov, Tom Peterka, Hanqi Guo, Mukund Raj, Jiayi Xu, and Han-Wei Shen: IExchange: Asynchronous Communication and Termination Detection for Iterative Algorithms, In Proceedings of IEEE Symposium on Large Data Analysis and Visualization (LDAV), 2021.
5. Xiaonan Ji, Yamei Tu, Wenbin He, Junpeng Wang, Han-Wei Shen, and Po-Yin Yen: USEVis: Visual analytics of attention-based neural embedding in information retrieval, Visual Informatics (2021).
6. Guan Li, Jiayi Xu, Tianchi Zhang, Guihua Shan, Han-Wei Shen, Ko-Chih Wang, Shihong Liao, and Zhonghua Lu: Distribution-based Particle Data Reduction for In-situ Analysis and Visualization of Large-scale N-body Cosmological Simulations, Pacific Visualization Symposium (PacificVis), 2020 IEEE, 171-180
7. Wenbin He, Teng-Yok Lee, Jeroen van Baar, Kent Wittenburg, Han-Wei Shen: DynamicsExplorer: Visual Analytics for Robot Control Tasks involving Dynamics and LSTM-based Control Policies. PacificVis 2020: 36-45
8. Guan Li, Jiayi Xu, Tianchi Zhang, Guihua Shan, Han-Wei Shen, Ko-Chih Wang, Shihong Liao, Zhonghua Lu: Distribution-based Particle Data Reduction for In-situ Analysis and Visualization of Large-scale N-body Cosmological Simulations. PacificVis 2020: 171-180
9. Ko-Chih Wang, Jiayi Xu, Jonathan Woodring, and Han-Wei Shen: Statistical Super Resolution for Data Analysis and Visualization of Large Scale Cosmological Simulations, Pacific Visualization Symposium (PacificVis), 2019 IEEE, 303-312
10. Cheng Li, and Han-Wei Shen: Object-in-Hand Feature Displacement with Physically-Based Deformation, Pacific Visualization Symposium (PacificVis), 2019 IEEE, 21-30
11. Wenbin He, Hanqi Guo, Tom Peterka, Sheng Di, Franck Cappello, and Han-Wei Shen: Parallel Partial Reduction for Large-Scale Data Analysis and Visualization, In Proceedings of 2018 IEEE Symposium on Large Data Analysis and Visualization, 2018. **[Best Paper Honorable Mention]**
12. Ko-Chih Wang, Naeem Shareef, and Han-Wei Shen: Image and Distribution Based Volume Rendering for Large Data Sets, Pacific Visualization Symposium (PacificVis), 2018 IEEE, 26-35
13. Tzu-Hsuan Wei, Soumya Dutta, and Han-Wei Shen: Information Guided Data Sampling and Recovery using Bitmap Indexing, Pacific Visualization Symposium (PacificVis), 2018 IEEE, 56-65
14. Soumya Dutta, Han-Wei Shen, and Jen-Ping Chen: In Situ Prediction Driven Feature Analysis in Jet Engine Simulations, Pacific Visualization Symposium (PacificVis), 2018 IEEE, 66-75
15. Cheng Li, Joachim Moortgat, and Han-Wei Shen: An Automatic Data Deformation Approach for Occlusion Free Egocentric Data Exploration, Pacific Visualization Symposium (PacificVis), 2018 IEEE, 215-224
16. Cheng Li, Xin Tong, and Han-Wei Shen, Virtual Retractor: An Interactive Data Exploration System Using Physically Based Deformation, IEEE Pacific Vis 2017

17. Soumya Dutta, Jonathan Woodring, Han-Wei Shen, Jen-Ping Chen, and James Ahrens, Homogeneity Guided Probabilistic Data Summaries for Analysis and Visualization of Large-Scale Data Sets,, IEEE Pacific Vis 2017
18. Tzu-Hsuan Wei, Chun-Ming Chen, Jon Woodring, Huijie Zhang, and Han-Wei Shen, Efficient Distribution based Feature Search in Multi-field Datasets,, IEEE Pacific Vis 2017
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Graduate Advisees

- **Completed PhDs (26):** Jinzhu Gao, Udeepa Bordoloi, Guangfeng Ji, Antonio Garcia, Chaoli Wang, Liya Li, Jonathan Woodring, Thomas Kerwin, Teng-Yok Lee, Boonthanome Nouanesengsy, Steve Martin, Ying Tu, Abon Chaudhuri, Chun-Ming Chen, Xiaotong Liu, Xin Tong, Kewei Liu, Ayan Biswas, Soumya Dutta, Tzu-Hsuan Wei, Cheng Li, Junpeng Wang, Ko-Chih Wang, Wenbin He, Subhashis Hazarika, Jiayi Xu

- **Completed Masters (8):** Xinyu Li, Guoshi Li, Hsin-Ji Wang, Ju-Yu Huang, Kan-Che Lee, Yuxiang Kuo, Larry King, Huimin Du