

Han-Wei Shen
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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 Principal 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

Research Fundings

- **NSF (PI)**
 - NSF IIS medium (\$715,314; 2020-2025)
 - NSF Big Data (\$727,258; 2013-2028)
 - NSF GV small (\$292,147; 2010-2014)
 - NSF CAREER 2004 (\$414,178; 2004-2010)
- **NSF (co-PI)**
 - National AI Institute (\$20M; 2021-2026)
 - RIDIR (\$1.4M; 2017-2023)
 - GV medium (\$542,000; 2011-2015)
 - CPATH:NEWPATH (\$639,822; 2007-2014)
 - ITR (\$300,000; 2003-2010)
 - MRI (\$1.5M; 2004-2010)
 - GV small (\$205,060; 2002-2006)
- **DOE (PI)**
 - ASCR, Office of Science (\$600,000; 2018-2023)
 - ASCR, Office of Science (\$637,500; 2014-2018)
 - ASCR , Office of Science (\$462,095; 2010-2014)
 - Early Career (\$299,945; 2003-2006)
- **DOE (co-PI)**
 - ScDAC BER (\$258,000; 2023-2028)
 - ASCR, Office of Science (\$600,000; 2022-2025)
 - SciDAC Computer Science Institute, V (\$550,000; 2020-2025)
 - SciDAC Computer Science Institute, IV (\$291,038; 2018-2021)
 - SciDAC Computer Science Institute, III (\$750,000; 2012-2017)
 - SciDAC Computer Science Institute, II (\$750,000; 2006-2012)

Journal Publications

1. Xiaoqi Wang, Kevin Yen, Yifan Hu, Han-Wei Shen. "SmartGD: A GAN-Based Graph Drawing Framework for Diverse Aesthetic Goals." *IEEE Transactions on Visualization and Computer Graphics*, 2024, Early access
2. Haoyu Li and Han-Wei Shen: "Improving Efficiency of Iso-Surface Extraction on Implicit Neural Representations Using Uncertainty Propagation." *IEEE Transactions on Visualization and Computer Graphics*, 2024. Early Access

3. Jingyi Shen and Han-Wei Shen: "PSRFlow: Probabilistic Super Resolution with Flow-Based Models for Scientific Data." *IEEE Transactions on Visualization and Computer Graphics*, 2004 (Special issue of IEEE VIS 2023)
4. S. W. Wurster, T. Xiong, H. -W Shen, H. Guo, T. Peterka. "Adaptively Placed Multi-Grid Scene Representation Networks for Large-Scale Data Visualization.", *IEEE Transactions on Visualization and Computer Graphics* 2004 (Special issue of IEEE VIS 2023)
5. cs, 2023.Yamei Tu, Olga Li, Junpeng Wang, Han-Wei Shen, Przemek Powałko, 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)*.
6. 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).
7. 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)
8. 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
9. 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
10. 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]**
11. 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)
12. 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)
13. 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)
14. 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)
15. 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]**
16. 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)

17. Jian Chen, Meng Ling, Rui Li, Petra Isenberg, Tobias Isenberg, Michael Sedlmair, Torsten Moller, Robert S. Laramee, 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)
18. 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)
19. 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)
20. 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.
21. 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
22. 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
23. 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)
24. 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
25. 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
26. Hank Childs et al.. A terminology for in situ visualization and analysis systems, *The International Journal of High Performance Computing Applications* (2020): 1094342020935991.
27. 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]**
28. 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]**
29. 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)
30. Jingyi Shen, Runqi Wang, Han-Wei Shen. Visual exploration of latent space for traditional Chinese music. *Visual Informatics* 4(2): 99-108 (2020)
31. 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)
32. Piyush Chawla, Subhashis Hazarika, Han-Wei Shen. Token-wise sentiment decomposition for ConvNet: Visualizing a sentiment classifier. *Vis. Informatics* 4(2): 132-141 (2020)

33. Junpeng Wang, Xiaotong Liu, Han-Wei Shen. High-dimensional data analysis with subspace comparison using matrix visualization. *Information Visualization* 18(1) (2019)
34. 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**]
35. 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
36. 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
37. 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)
38. 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)
39. 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)
40. 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)
41. 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)
42. 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**]
43. 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)
44. 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)
45. 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)
46. 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**]

47. 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 .
48. 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)
49. 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)
50. 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)
51. 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)
52. 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.
53. 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.
54. 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.
55. Liu,Xiaotong; Shen,Han-Wei. Association Analysis for Visual Exploration of Multivariate Scientific Data Sets. *IEEE Transactions on Vsualization and Computer Graphics.* Vol. 22, no. 1. (Jan. 2016): 955-964.
56. 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.
57. 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.
58. Abon Chaudhuri, Teng-Yok Lee, Han-Wei Shen, Rephael Wenger. Exploring FLow Fields Using Space-Filling Analysis of StreamInies. *IEEE Transactions on Visualization and Computer Graphics.* Vol. 20, no. 10, (Oct. 2014): 1392-1404.
59. 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.
60. 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.
61. 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.
62. 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.
63. 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.
64. 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.

65. Wong, P, Shen, Han-Wei, Pascucci, V. Extreme-Scale Visual Analytics. *IEEE Computer Graphics and Applications*. Vol. 32, no. 4. (Jul. 2012): 23-35.
66. 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.
67. Boonthanome Nouanesengsy, 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.
68. 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.
69. Wang, Chaoli; Shen, Han-Wei. Information Theory in Scientific Visualization. *Entropy*. Vol. 1, no. 13. (Jan. 2011): 254-273.
70. 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.
71. Ahrens, James; Shen, Han-Wei. Ultrascale Visualization. *IEEE COMPUTER GRAPHICS AND APPLICATIONS*. Vol. 30, no. 3. (May 2010): 20-21.
72. 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.
73. 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.
74. Firdaus Janoos, Booth Nouanesengsy, Raghu Machiraju, Han-Wei Shen, and Steffen Sammet, Michael Knopp, and Istvan Morcz,. Visual Analysis of Brain Activity from fMRI Data. *Computer Graphics Forum*. Vol. 28, no. 3. (Jan. 2009):904-910.
75. 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.
76. 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.
77. 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.
78. 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.
79. Han-Wei Shen. Interacting with Tree Dimensional Flow Fields. *ACM SIGGRAPH, Computer Graphics quarterly*. Vol. 42, no. 2. (Jan 2008)
80. 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).
81. Yuan Hong and Han-Wei Shen. Parallel Reflective Symmetry Transformation for Volume Data. *Computers & Graphics*. Vol. 32, no. 1. (Jan. 2008): 41-48.
82. 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.

83. 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.
84. Woodring, Jonathan; Shen, Han-Wei. Incorporating highlighting animations into static visualizations. *VISUALIZATION AND DATA ANALYSIS 2007*. Vol. 6495, (Jan. 2007)
85. 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.
86. 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.
87. 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.
88. 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.
89. Antonio Garcia and Han-Wei Shen. GPU-based 3D Wavelet Reconstruction with Tileboarding. *The Visual Computer*. Vol. 21, no. 8. (Jan. 2005): 755-763.
90. 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.
91. Udeepsa 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.
92. Han-Wei Shen, Guo-Shi Li, and Udeepsa 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.
93. Udeepsa 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.
94. 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.
95. Han-Wei Shen. Using Line Integral Convolution to Visualize Dense Vector Fields. *Computers in Physics*. Vol. 11, no. 5. (Jan. 1997): 474-480.
96. 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. Xiaoqi Wang, Wenbin He, Xiwei Xuan, Clint Sebastian, Jorge Henrique Piazzentin Ono, Xin Li, Sima Behpour, Thang Doan, Liang Gou, Han-Wei Shen, Liu Ren. "USE: Universal Segment embeddings for Open-Vocabulary Image Segmentation." In Proceedings of the IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2024.
2. Haoyu Li, Isaac J Michaud, Ayan Biswas, Han-Wei Shen, "Efficient Level-Crossing Probability Calculation for Gaussian Process Modeled Data", 2024 IEEE Pacific Visualization Symposium (PacificVis)
3. Xiaoqi Wang and Han-Wei Shen. "GNNBoundary: Towards Explaining Graph Neural Networks Through the Lens of Decision Boundaries." In Proceedings of the International Conference on Learning Representations (ICLR), 2024.
4. Yamei Tu, Rui Qiu, Han-Wei Shen, "KG-PRE-view: Democratizing A TVCG Knowledge Graph through Visual Explorations", 2024 IEEE Pacific Visualization Symposium (PacificVis)

5. 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.
6. 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.
7. Skylar W Wurster, Hanqi Guo, Tom Peterka, Han-Wei Shen. "Neural Stream Functions." *In Proceedings of PacificVis 2023*.
8. 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.
9. Yamei Tu, Jiayi Xu, Han-Wei Shen: KeywordMap: Attention-based Visual Exploration for Keyword Analysis, Pacific Visualization Symposium (PacificVis), 2021 IEEE, 206-215
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Graduate Advisees

- **Completed PhDs** (26): Jinzhu Gao, Udeepsa 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