Wenbin He

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Education

2012 – 2019 **Department of Computer Science and Engineering, The Ohio State University, OH**

Ph.D.

Advisor: Prof. Han-Wei Shen

2008 – 2012 **School of Software, Beijing Institute of Technology, Beijing, China**

B.Eng.

Work Experience

03/2020 – Present **Research Scientist** **Bosch, CA**

05/2017 – 12/2016 **Graduate Research Associate** **The Ohio State University, OH**

Worked on developing data visualization techniques that utilize machine learning to solve complex data analysis problems, and conversely, interpreting and diagnosing machine learning models with interactive visual analytics approaches.

01/2017 – 05/2017 **Graduate Teaching Associate** **The Ohio State University, OH**

Teaching associate for *Real-Time Rendering* and *Introduction to Data Visualization* classes.

05/2019 – 07/2019 **Summer Intern** **Mitsubishi Electric Research Laboratories, MA**

Worked on developing visual analytics techniques to interpret and diagnose deep reinforcement learning models for robot control tasks, especially focusing on studying transfer failures from simulations to real robots.

05/2016 – 08/2016 **Research Aide** **Argonne National Laboratory, IL**

Worked on developing parallel reduction techniques to visualize and analyze extreme-scale datasets on supercomputers.

05/2015 – 07/2015 **Research Aide** **Argonne National Laboratory, IL**

Worked on analysis and visualization of uncertain unsteady flows using statistical models.

Skills

Languages: C/C++, Python, JavaScript, HTML, CSS

Graphics and Data Visualization: OpenGL, WebGL, GLSL, D3.js, Three.js

High-Performance Computing: CUDA, MPI

Machine Learning: PyTorch, TensorFlow, scikit-learn

Publications

- **Wenbin He**, Teng-Yok Lee, Jeroen van Baar, Kent Wittenburg, and Han-Wei Shen, "DynamicsExplorer: Visual Analytics for Robot Control Tasks involving Dynamics and LSTM-based Control Policies," In *Proceedings of 2020 IEEE Pacific Visualization Symposium*, 2020.
- **Wenbin He**, Junpeng Wang, Hanqi Guo, Ko-Chih Wang, Han-Wei Shen, Mukund Raj, Youssef S. G. Nashed, and Tom Peterka, "InSituNet: Deep Image Synthesis for Parameter Space Exploration of Ensemble Simulations," *IEEE Transactions on Visualization and Computer Graphics (SciVis 2019)*, vol. 26, no. 1, pp. 23-33, 2020. (**Best Paper Award**)
- **Wenbin He**, Hanqi Guo, Han-Wei Shen, and Tom Peterka, "eFESTA: Ensemble Feature Exploration with Surface Density Estimates," *IEEE Transactions on Visualization and Computer Graphics*, vol. 26, no. 4, pp. 1716-1731, 2020.
- 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*, vol. 25, no. 9, pp. 2710-2724, 2019.
- **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*, pp. 45-55, 2018. (**Best Paper Honorable Mention**)
- **Wenbin He**, Xiaotong Liu, Han-Wei Shen, Scott M. Collis, and Jonathan J. Helmus, "Range Likelihood Tree: A Compact and Effective Representation for Visual Exploration of Uncertain Data Sets," In *Proceedings of 2017 IEEE Pacific Visualization Symposium*, pp. 151–160, 2017.
- 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 (PacificVis 2016)*, vol. 22, no. 6, pp. 1672–1682, 2016.
- **Wenbin He**, Chun-Ming Chen, Xiaotong Liu, and Han-Wei Shen, "A Bayesian Approach for Probabilistic Streamline Computation in Uncertain Flows," In *Proceedings of 2016 IEEE Pacific Visualization Symposium, Visualization Notes*, pp. 214–218, 2016.
- Ayan Biswas, David Thompson, **Wenbin He**, Qi Deng, Chun-Ming Chen, Han-Wei Shen, Raghu Machiraju, and Anand Rangarajan, "An Uncertainty-Driven Approach to Vortex Analysis Using Oracle Consensus and Spatial Proximity," In *Proceedings of 2015 IEEE Pacific Visualization Symposium*, pp. 223–230, 2015.

Services

Reviewer

- IEEE Transactions on Visualization and Computer Graphics (TVCG), 2020
- Journal of Visualization (JOV), 2017
- IEEE VIS, 2018, 2019
- EG/VGTC Conference on Visualization (EuroVis), 2018, 2020
- IEEE Pacific Visualization Symposium (PacificVis), 2020
- China Visualization and Visual Analytics Conference (ChinaVis), 2018, 2019