# SKYLAR WOLFGANG WURSTER

Columbus, OH 43201

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## RESEARCH INTEREST

My focus is within machine learning, scientific data visualization, and computer graphics.

## EDUCATION

**Ph.D in Computer Science**                                     August 2019 - present
The Ohio State University
Advised by Prof. Han-Wei Shen

**B.S. in Computer Science and Engineering**                     August 2015 - May 2019
The Ohio State University
Magna Cum Laude, Dean's List 8 semesters

## EMPLOYMENT

**The Ohio State University**                                    August 2020 - present
*Graduate Research Assistant*

· Advised by Professor Han-Wei Shen, researching scientific visualization and deep learning.

**Argonne National Lab**                          May 2020/21/22 - August 2020/21/22
*Research Aide*

· Working in the Laboratory for Applied Mathematics, Numerical Software, and Statistics group of the Mathematics and Computer Science Division. https://www.anl.gov/mcs/lans.
· Researching hierarchical implicit neural representations for large-scale scientific data for data reduction, analysis, and visualization, as well as vector field stream surface extraction via implicit neural networks.

**The Ohio State University**                                    August 2019 - May 2020
*Graduate Teaching Assistant*

· Taught CSE 2221: Software 1 to a class of 40 undergraduate students.
· Scored better than average on all student evaluation questions compared to instructors within the university, the college of engineering, and the department of computer science.

**The Ohio State University - ACCAD**                            January 2017 - May 2019
*Undergraduate Research Assistant*

**United Airlines**                                              May 2018 - August 2018
*Contact Center IT Intern*

**Air Force Research Lab - Discovery Lab**                       June 2015 - December 2015
*Intern*

**Dundee Crown High School**                                     August 2014 - May 2015
*AVID Tutor*

## AWARDS

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| First place at a Microsoft coding contest at OSU | September 20, 2017 |
| Humane Technologies Fellow | August 2017 - May 2018 |
| National Buckeye Scholarship | August 2015 - May 2019 |
| Provost Scholarship | August 2015 - May 2019 |

## PUBLICATIONS AND PRESENTATIONS

S. W. Wurster, H. Guo, H. -W. Shen, T. Peterka and J. Xu, "Deep Hierarchical Super Resolution for Scientific Data," in IEEE Transactions on Visualization and Computer Graphics, 2022. Early access.

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 (Proc. IEEE PacificVis 2022), 2022, Accepted.

Xu, J., Guo, H., Shen, H.-W., Raj, M., Wurster, W. S., Peterka, T.. "Reinforcement Learning for Load- balanced Parallel Particle Tracing". IEEE Transactions on Visualization and Computer Graphics. 2022.

Bruggeman, K. and Wurster, S. W. 2018. "The Hiatus System: virtual healing spaces: low dose mindfulness based stressed reduction virtual reality application". SIGGRAPH '18 ACM SIGGRAPH 2018 Appy Hour. 8

Paul Hyunjin Kim, Jacob Grove, Skylar Wurster, and Roger Crawfis. 2019. "Design-centric maze generation". In Proceedings of the 14th International Conference on the Foundations of Digital Games (FDG '19). ACM, New York, NY, USA, Article 83, 9 pages.

VIS 2019 - Presented on behalf of Junpeng Wang: J. Wang, S. Hazarika, C. Li and H. Shen, "Visualization and Visual Analysis of Ensemble Data: A Survey," in IEEE Transactions on Visualization and Computer Graphics, vol. 25, no. 9, pp. 2853-2872, 1 Sept. 2019. doi: 10.1109/TVCG.2018.2853721. https://vimeo.com/373017114

VIS 2019 - Presented on behalf of Ko-Chih Wang: K. Wang, T. Wei, N. Shareef and H. Shen, "Ray-based Exploration of Large Time-varying Volume Data Using Per-ray Proxy Distributions," in IEEE Transactions on Visualization and Computer Graphics. doi: 10.1109/TVCG.2019.2920130. https://vimeo.com/375028920