SKYLAR WOLFGANG WURSTER

Columbus, OH 43201
1 224 800 8152 ◇ swwurster@gmail.com ◇ swwurster.com

STATEMENT OF PURPOSE

I will be graduating in Fall 2024 with a PhD in computer science, focused on the intersection of computer graphics and machine learning with special interest in neural representations and creating delightful experiences for users of 3D+AI tech.

SKILLS AND LANGUAGES

Deep learning, neural networks, computer graphics, rendering, scientific visualization, 3D modelling, game engines, neural representations, generative models, stable diffusion, Python, PyTorch, C/C++, CUDA, Java, C#, git, Docker, CI, CD.

EDUCATION

Ph.D in Computer Science August 2019 - December 2024 (expected)
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

Adobe June 2023 - December 2023
AI/ML Research Intern *San Francisco, CA*

· Released a 3D data ingestion and rendering pipeline to rapidly create datasets for 3D gen-AI model training.
· Improved 3D capture pipeline CI/CD and explored ML calibration.

Tencent Pixel Lab June 2023 - December 2023
Graphics Research Intern *New York, NY*

· Researched a Gabor-based neural scene representation published at SIGGRAPH 2024.

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

· Advised by Dr. Tom Peterka and Prof. Hanqi Guo. Researched and published 3 papers for topics covering hierarchical super-resolution and implicit neural representations for 3D scientific data.

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

· Advised by Professor Han-Wei Shen. Ongoing Ph.D research for the intersection of graphics, scientific visualization, and deep learning.

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

· Taught CSE 2221: Software 1 to a class of 40 students, and scored above 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 *Columbus, OH*

· Implemented augmented/mixed/virtual reality applications for use by students and faculty for research grants.

AWARDS

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

Skylar Wurster, Ran Zhang, and Changxi Zheng. "Gabor Splatting for High-Quality Gigapixel Image Representations." In *ACM SIGGRAPH 2024 Posters*.

Tianyu Xiong, **Skylar W. Wurster**, Hanqi Guo, Tom Peterka, and Han-Wei Shen. "Regularized Multi-Decoder Ensemble for an Error-Aware Scene Representation Network". https://arxiv.org/abs/2407.19082.

S. W. Wurster, T. Xiong, H. -W Shen, H. Guo, T. Peterka. "Adaptively Placed Multi-Grid Scene Representation Networks for Large-Scale Data Visualization," In *Proc. IEEE VIS*, 2023.

S. W. Wurster, H. Guo, T. Peterka, H. -W. Shen. "Neural Stream Functions," In *Proc. IEEE PacificVIS*, 2023.

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

Neng Shi, Jiayi Xu, **S. 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., **S. W. Wurster**, Peterka, T.. "Reinforcement Learning for Load- balanced Parallel Particle Tracing". *IEEE Transactions on Visualization and Computer Graphics*. 2022.

Bruggeman, K. and **S. W. Wurster** 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, **S. W. 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.