Sam Sartor

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Sam works on nasty graphics problems with Pieter Peers, when not playing fiddle music or skiing.

Education

Colorado School of Mines *Aug 2015 - Dec 2018*
B.S. in Computer Science
Minor in Applied Mathematics

William & Mary *Aug 2021 - Present*
Ph.D. in Computer Science *est. May 2026*
M.S. in Computer Science *Jun 2023*

First-Author Publications

Teamwork: Collaborative Diffusion with Low-rank Coordination and Adaptation
SIGGRAPH Asia, Dec 2025
I introduced a unified solution for jointly increasing the number of input and output channels of pretrained diffusion models, achieving state-of-the-art on tasks such as reflectance estimation and intrinsic decomposition. The solution is a novel variation of Low Rank-Adaptation (LoRA) which jointly addresses both adaptation and coordination between many copies of the backbone model.

Content-aware Tile Generation using Exterior Boundary Inpainting
ACM Transactions on Graphics, Volume 43
SIGGRAPH Asia, Dec 2024
I presented a simple yet novel method for generating sets of tiles from photographs or text prompts. Instead of copying patches of the input image to form the tiles as in prior methods, I leveraged the prior knowledge of natural images and textures embedded in pretrained diffusion models to create fully unique tiles. I also developed dual tiling, an improvement on the classic Wang tile scheme which can better support complex image content.

MatFusion: A Generative Diffusion Model for SVBRDF Capture
SIGGRAPH Asia, Dec 2023
I was the first to formulate the problem of SVBRDF estimation from photographs as a diffusion task. I collected a dataset of 312,165 freely-licensed material exemplars, rendered them in Blender under various lighting conditions, and scratch-trained corresponding material estimation diffusion models. My method achieved equal or better accuracy vs regressive models available at the time.

Work

Research Scientist Intern – Adobe Research *Jun 2025 - Sept 2025*
Ongoing investigation into prompt-free image editing techniques with the latest generation of image diffusion models. Mentored by Valentin Deschaintre, Michael Fischer, and Iliyan Georgiev.

Senior Software Engineer – SketchUp – Trimble Inc. *Jan 2019 - Jul 2021*
Lead developer on the WebAssembly+WebGL-based SketchUp for Web project. I also worked with our product lead to develop major features such as the command pallet, Google Drive integration, trackpad input mode, GLTF exporter, and node-based procedural modeling tools.

Other

Hornpipe *Jan 2020 - Present*
Transactional memory system, weak reference garbage collector, and dataflow system for Rust.

HypAR Map *1st – Facebook Global Hackathon Finals – Nov 2018*
Won with an indoor navigation app. I contributed the position solver, which tracked nearby walls.

Disjoint Captures *Aug 2018*
I proposed the improvement to capturing of struct fields by closures implemented in Rust 2021.