

PAPERS

- [1] **Single Mesh Diffusion Models with Field Latents for Texture Generation**
T. W. Mitchel, C. Esteves, A. Makadia
ARXIV, 2023
- [2] **Möbius Convolutions for Spherical CNNs**
T. W. Mitchel, N. Aigerman, V. G. Kim, M. Kazhdan
ACM SIGGRAPH, 2022
- [3] **Extending Convolution Through Spatially Adaptive Alignment**
T. W. Mitchel
PHD THESIS, JOHNS HOPKINS UNIVERSITY, 2022
- [4] **Field Convolutions for Surface CNNs**
T. W. Mitchel, V. G. Kim, M. Kazhdan
INTERNATIONAL CONFERENCE ON COMPUTER VISION (ICCV), 2021
SELECTED FOR ORAL PRESENTATION
- [5] **ECHO: Extended Convolution Histogram of Orientations For Local Surface Description**
T. W. Mitchel, S. Rusinkiewicz, G. S. Chirikjian, M. Kazhdan
COMPUTER GRAPHICS FORUM, 2021
- [6] **Continuous Body 3D Reconstruction of Limbless Animals**
Q. Fu[†], T. W. Mitchel[†], J. S. Kim, G. S. Chirikjian, C. Li
[†]*Equally contributing authors*
JOURNAL OF EXPERIMENTAL BIOLOGY, 2021
- [7] **Efficient Spatially Adaptive Convolution and Correlation**
T. W. Mitchel, B. Brown, D. Koller, T. Weyrich, S. Rusinkiewicz, M. Kazhdan
ARXIV, 2020
- [8] **Quotienting Impertinent Camera Kinematics for 3D Video Stabilization**
T. W. Mitchel, C. Wüelker, J. S. Kim, S. Ruan, G. S. Chirikjian
ICCV 2019 ADVANCES IN IMAGE MANIPULATION WORKSHOP
- [9] **Snakes Partition Their Body to Traverse Large Steps Stably**
S. W. Gart, T. W. Mitchel, C. Li
JOURNAL OF EXPERIMENTAL BIOLOGY, 2019
- [10] **Improving the Propulsion Speed of a Heaving Wing Through Artificial Evolution of Shape**
S. Ramanarivo, T. W. Mitchel, L. Ristroph
PROCEEDINGS OF THE ROYAL SOCIETY A, 2019

TALKS

Möbius Convolutions for Spherical CNNs

SIGGRAPH 2022 ORAL PRESENTATION

Vancouver, BC • Aug 2022

Transformation-Aware Convolutions for Image and Shape Analysis

APPLE

Cupertino, CA (Virtual) • July 2023

ROBLOX RESEARCH

San Mateo, CA (Virtual) • Sept 2022

SONY RESEARCH

San Jose, CA (Virtual) • Sept 2022

GOOGLE RESEARCH

New York, NY (Virtual) • July 2022

CAM INITIATIVE, UCHICAGO

Chicago, IL (Virtual) • June 2022

DYNAMIC GRAPHICS PROJECT, UTORONTO

Toronto, ON • May 2022

NVIDIA AI

Toronto, ON (Virtual) • April 2022

GEOVIC GROUP, ECOLE POLYTECHNIQUE

Paris, France (Virtual) • April 2022

MATHEMATICAL DATA SCIENCE GROUP, JHU

Baltimore, MD • March 2022

QUALCOMM RESEARCH

San Diego, CA (Virtual) • Feb 2022

AMAZON RESEARCH

Sunnyvale, CA (Virtual) • Feb 2022

ADOBE RESEARCH

San Jose, CA (Virtual) • Dec 2021

Field Convolutions for Surface CNNs

ICCV 2021 ORAL PRESENTATION

(Virtual) • Oct 2021

A Novel 3D Full Body Model of Snake Locomotion in Complex 3D Terrain

APS MARCH MEETING

Los Angeles, CA • March 2018

Snakes Traversing Large Step Obstacles: Kinematics and Mechanics

SOCIETY FOR INTEGRATIVE AND COMPARATIVE BIOLOGY

San Francisco, CA • Jan 2018

TEACHING

Johns Hopkins University • Teaching Assistant

EN.601.457/657 COMPUTER GRAPHICS

Fall 2020 – 2021

EN.601.454/654 ALTERNATE REALITY

Spring 2021

EN.601.459/659 COMPUTATIONAL GEOMETRY

Spring 2020

EN.530.645 KINEMATICS

Spring 2019

EN.530.653 ADVANCED SYSTEMS MODELING

Fall 2018

SERVICE

Reviewer CVPR, SIGGRAPH, SIGGRAPH Asia, PAMI

SOFTWARE

TS2Kit

Lightweight library for differentiable spherical harmonic transforms in PyTorch

<https://github.com/twmitchel/TS2Kit>

ECHO Descriptors

C++ library for intrinsic surface feature descriptors

<https://github.com/mkazhdan/ECHODescriptors>

SKILLS

Programming C++, Python

Libraries JAX, PyTorch, Eigen, CMake, OpenGL, Pybind, OpenCV

Tools Linux, MATLAB, Mathematica, \LaTeX

Theoretical Lie Groups, Differential Geometry, FFTs, Neural Networks

Experimental High-Speed Video, 3D Tracking & Reconstruction