

HSUEH-TI DEREK LIU

Curriculum Vitæ

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EDUCATION

- University of Toronto 2017 - Expected September 2022
PhD, Computer Science
Advisor: Alec Jacobson
- Carnegie Mellon University 2015 - 2017
MS, Mechanical Engineering
Advisors: Levent Burak Kara, Keenan Crane
- National Taiwan University 2010 - 2014
BS, Engineering Science and Ocean Engineering

PUBLICATIONS

1. Learning Smooth Neural Functions via Lipschitz Regularization 2022
Hsueh-Ti Derek Liu, Francis Williams, Alec Jacobson, Sanja Fidler, Or Litany
ACM SIGGRAPH
2. Kubric: A scalable dataset generator 2022
Klaus Greff, Francois Belletti, Lucas Beyer, Carl Doersch, Yilun Du, Daniel Duckworth, David J. Fleet, Dan Gnanapragasam, Florian Golemo, Charles Herrmann, Thomas Kipf, Abhijit Kundu, Dmitry Lagun, Issam Laradji, **Hsueh-Ti Derek Liu**, Henning Meyer, Yishu Miao, Derek Nowrouzezahrai, Cengiz Oztireli, Etienne Pot, Noha Radwan, Daniel Rebain, Sara Sabour, Mehdi S. M. Sajjadi, Matan Sela, Vincent Sitzmann, Austin Stone, Deqing Sun, Suhani Vora, Ziyu Wang, Tianhao Wu, Kwang Moo Yi, Fangcheng Zhong, Andrea Tagliasacchi
CVPR
3. Surface Multigrid via Intrinsic Prolongation 2021
Hsueh-Ti Derek Liu, Jiayi Eris Zhang, Mirela Ben-Chen, Alec Jacobson
ACM SIGGRAPH
4. Normal-Driven Spherical Shape Analogies 2021
Hsueh-Ti Derek Liu, Alec Jacobson
Eurographics Symposium on Geometry Processing (SGP)
5. Chordal Decomposition for Spectral Coarsening 2020
Honglin Chen, **Hsueh-Ti Derek Liu**, Alec Jacobson, David I.W. Levin
ACM SIGGRAPH Asia
6. Neural Subdivision 2020
Hsueh-Ti Derek Liu, Vladimir G. Kim, Siddhartha Chaudhuri, Noam Aigerman, Alec Jacobson
ACM SIGGRAPH

7. Spectral Mesh Simplification 2020
Thibault Lescoat, **Hsueh-Ti Derek Liu**, Jean-Marc Thiery, Alec Jacobson, Tamy Boubekeur, Maks Ovsjanikov
Eurographics
8. Cubic Stylization 2019
Hsueh-Ti Derek Liu, Alec Jacobson
ACM SIGGRAPH Asia
9. Spectral Coarsening of Geometric Operators 2019
Hsueh-Ti Derek Liu, Alec Jacobson, Maks Ovsjanikov
ACM SIGGRAPH
10. Beyond Pixel Norm-Balls: Parametric Adversaries using an Analytically Differentiable Renderer 2019
Hsueh-Ti Derek Liu, Michael Tao, Chun-Liang Li, Derek Nowrouzezahrai, Alec Jacobson
ICLR
11. Paparazzi: Surface Editing by way of Multi-View Image Processing 2018
Hsueh-Ti Derek Liu, Michael Tao, Alec Jacobson
ACM SIGGRAPH Asia
12. A Dirac Operator for Extrinsic Shape Analysis 2017
Hsueh-Ti Derek Liu, Alec Jacobson, Keenan Crane
Eurographics Symposium on Geometry Processing (SGP)

AWARDS

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| Robert E. Lansdale / Okino Computer Graphics Graduate Fellowship | 2020, 2021 |
| Adobe Research Fellowship | 2020 |
| Mary H. Beatty Fellowship | 2019 |
| Mitacs Globalink Research Award | 2018 |

CONFERENCE TALKS

1. ACM SIGGRAPH, Vancouver, Canada August 2022
Learning Smooth Neural Functions via Lipschitz Regularization
2. ACM SIGGRAPH (Labs Demo), Vancouver, Canada August 2022
Learning Smooth Neural Functions via Lipschitz Regularization
3. ACM SIGGRAPH, Virtual August 2021
Surface Multigrid via Intrinsic Prolongation
4. Symposium on Geometry Processing, Virtual July 2021
Normal-Driven Spherical Shape Analogies
5. EUROGRAPHICS, Virtual May 2021
3D Modeling for Everyone
6. ACM SIGGRAPH, Virtual August 2020
Neural Subdivision

7. ACM SIGGRAPH Asia, Brisbane, Australia November 2019
Cubic Stylization
8. ACM SIGGRAPH, Los Angeles, United States August 2019
Spectral Coarsening of Geometric Operators
9. Graphics Interface, Kingston, Canada May 2019
Spectral Coarsening of Geometric Operators
10. International Conference on Learning Representation, New Orleans, United States May 2019
Beyond Pixel Norm-Balls: Parametric Adversaries using an Analytically Differentiable Renderer
11. ACM SIGGRAPH Asia, Tokyo, Japan December 2018
Paparazzi: Surface Editing by way of Multi-View Image Processing
12. ACM SIGGRAPH Asia (Doctoral Consortium), Tokyo, Japan December 2018
Operator-Preserving Algebraic Coarsening
13. Symposium on Geometry Processing, London, United Kingdom July 2017
A Dirac Operator for Extrinsic Shape Analysis

RESEARCH & WORK EXPERIENCE

1. *Consultant* December 2021 - Present
Urus Entertainment, Burbank, United States
2. *Research Intern* July 2021 - September 2021
NVIDIA AI, Toronto, Canada
Mentor: Sanja Fidler
3. *Research Intern* February 2021 - April 2021
NVIDIA AI, Toronto, Canada
Mentor: Sanja Fidler
4. *Research Intern* June 2019 - August 2019
Adobe Research, Seattle, United States
Mentors: Noam Aigerman, Siddhartha Chaudhuri, Vova Kim
5. *Visiting Researcher* June 2018 - January 2019
École polytechnique, Palaiseau, France
Mentor: Maks Ovsjanikov

INVITED TALKS

1. Technion - Israel Institute of Technology July 2022
3D Content Creation Made Fast & Easy
2. Talking Papers Podcast May 2022
Learning Smooth Neural Functions via Lipschitz Regularization
3. Roblox April 2022
3D Content Creation Made Fast & Easy

4. McGill
3D Content Creation Made Fast & Easy March 2022
5. Amazon
3D Content Creation Made Fast & Easy March 2022
6. Toronto Geometry Colloquium
3D Content Creation Made Fast & Easy March 2022
7. Université de Montréal
3D Content Creation Made Fast & Easy February 2022
8. Massachusetts Institute of Technology
Towards Scalable Geometry Processing May 2021
9. Autodesk AI
Generative Models for Stylized Geometry March 2021
10. NVIDIA AI, Toronto
3D Modeling for Everyone October 2020
11. GAMES, China
3D Modeling for Everyone September 2020
12. TOMOGRAPH, Waterloo, ON
Neural Subdivision December 2019
13. Autodesk Research, Toronto, ON
Cubic Stylization November 2019
14. Adobe Research, Seattle, WA
Spectral Coarsening of Geometric Operator August 2019
15. University of Washington, Seattle, WA
Spectral Coarsening of Geometric Operators July 2019
16. Fields Institute, Toronto, ON
Paparazzi: Surface Editing by way of Multi-View Image Processing May 2019
17. Vector Institute, Toronto, ON
Beyond Pixel Norm-Balls: Parametric Adversaries using an Analytically Differentiable Renderer March 2019
18. École Polytechnique, Palaiseau, France
Paparazzi: Surface Editing by way of Multi-View Image Processing October 2018
19. Google
A Differentiable Renderer for Image-Driven Shape Optimization August 2018
20. École Polytechnique, Palaiseau, France
A Differentiable Renderer for Image-Driven Shape Optimization July 2018
21. University of Toronto, Toronto, ON
From Intrinsic to Extrinsic Shape Analysis April 2017

TEACHING

SIGGRAPH

Co-Lecturer : An Introduction to Deep Learning on Meshes 2021

SIGGRAPH Asia

Co-Lecturer : An Introduction to Deep Learning on Meshes 2021

Symposium on Geometry Processing

Co-Lecturer : An Introduction to Geometry Processing Programming in MATLAB with gptoolbox 2021

Summer Geometry Institute

Lecturer : Shape Deformation 2021, 2022

University of Toronto

Substitute Lecturer : CSC2520 Geometry Processing 2020

Substitute Lecturer : CSC2521 Seminar in Geometry and Animation 2019

Teaching Assistant : CSC2549 Physics-Based Animation 2019

Carnegie Mellon University

Teaching Assistant : 24-785 Engineering Optimization 2016

PROFESSIONAL ACTIVITIES

Toronto Geometry Colloquium

<https://toronto-geometry-colloquium.github.io>

Co-organizing a weekly webseries to promote young researchers and researchers from underrepresented communities.

Conference Program Committees

Eurographics, Pacific Graphics, Shape Modelling International, Graphics Interface

Reviewer

ACM SIGGRAPH North America, ACM SIGGRAPH Asia, ACM Symposium on User Interface Software and Technology, ACM Transactions on Graphics, Computer-Aided Design, Computer Animation and Virtual Worlds, Computer Graphics and Applications, Computer Graphics Forum, Eurographics, Graphics Interface, IEEE Transactions on Visualization and Computer Graphics, Pacific Graphics, Shape Modelling International

PATENTS

- Decimating a Three-dimensional Mesh via Successive Self-parameterization 2020
- Subdividing a Three-dimensional Mesh Utilizing a Neural Network 2020