

HSUEH-TI DEREK LIU

Curriculum Vitæ

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EDUCATION

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

JOURNAL PUBLICATIONS

1. **Hsueh-Ti Derek Liu**, Jiayi Eris Zhang, Mirela Ben-Chen, Alec Jacobson
Surface Multigrid via Intrinsic Prolongation
ACM Transactions on Graphics (Proc. SIGGRAPH) 2021
2. **Hsueh-Ti Derek Liu**, Alec Jacobson
Normal-Driven Spherical Shape Analogies
Computer Graphics Forum (Proc. Symposium on Geometry Processing) 2021
3. Honglin Chen, **Hsueh-Ti Derek Liu**, Alec Jacobson, David I.W. Levin
Chordal Decomposition for Spectral Coarsening
ACM Transactions on Graphics (Proc. SIGGRAPH Asia) 2020
4. **Hsueh-Ti Derek Liu**, Vladimir G. Kim, Siddhartha Chaudhuri, Noam Aigerman, Alec Jacobson
Neural Subdivision
ACM Transactions on Graphics (Proc. SIGGRAPH) 2020
5. Thibault Lescoat, **Hsueh-Ti Derek Liu**, Jean-Marc Thiery, Alec Jacobson, Tamy Boubekeur, Maks Ovsjanikov
Spectral Mesh Simplification
Computer Graphics Forum (Proc. Eurographics) 2020
6. **Hsueh-Ti Derek Liu**, Alec Jacobson
Cubic Stylization
ACM Transactions on Graphics (Proc. SIGGRAPH Asia) 2019
7. **Hsueh-Ti Derek Liu**, Alec Jacobson, Maks Ovsjanikov
Spectral Coarsening of Geometric Operators
ACM Transactions on Graphics (Proc. SIGGRAPH) 2019

8. **Hsueh-Ti Derek Liu**, Michael Tao, Alec Jacobson
Paparazzi: Surface Editing by way of Multi-View Image Processing
ACM Transactions on Graphics (Proc. SIGGRAPH Asia) 2018
9. **Hsueh-Ti Derek Liu**, Alec Jacobson, Keenan Crane
A Dirac Operator for Extrinsic Shape Analysis
Computer Graphics Forum (Proc. Symposium on Geometry Processing) 2017

CONFERENCE PUBLICATIONS

1. **Hsueh-Ti Derek Liu**, Michael Tao, Chun-Liang Li, Derek Nowrouzezahrai, Alec Jacobson
Beyond Pixel Norm-Balls: Parametric Adversaries using an Analytically Differentiable Renderer
International Conference on Learning Representation 2019

AWARDS

Robert E. Lansdale / Okino Computer Graphics Graduate Fellowship	2020, 2021
Adobe Research Fellowship	2020
Mary H. Beatty Fellowship	2019
Mitacs Globalink Research Award	2018
Yan-Jin Chen Scholarship	2014

CONFERENCE TALKS

1. ACM SIGGRAPH, Virtual August 2021
Surface Multigrid via Intrinsic Prolongation
2. Symposium on Geometry Processing, Virtual July 2021
Normal-Driven Spherical Shape Analogies
3. EUROGRAPHICS, Virtual May 2021
3D Modeling for Everyone
4. ACM SIGGRAPH, Virtual August 2020
Neural Subdivision
5. ACM SIGGRAPH Asia, Brisbane, Australia November 2019
Cubic Stylization
6. ACM SIGGRAPH, Los Angeles, CA August 2019
Spectral Coarsening of Geometric Operators
7. Graphics Interface, Kingston, ON May 2019
Spectral Coarsening of Geometric Operators
8. International Conference on Learning Representation, New Orleans, LA May 2019
Beyond Pixel Norm-Balls: Parametric Adversaries using an Analytically Differentiable Renderer
9. ACM SIGGRAPH Asia, Tokyo, Japan December 2018
Paparazzi: Surface Editing by way of Multi-View Image Processing

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| 10. ACM SIGGRAPH Asia (Doctoral Consortium), Tokyo, Japan
<i>Operator-Preserving Algebraic Coarsening</i> | December 2018 |
| 11. Symposium on Geometry Processing, London, United Kingdom
<i>A Dirac Operator for Extrinsic Shape Analysis</i> | July 2017 |

RESEARCH EXPERIENCE

- | | |
|--|-------------------------------------|
| 1. <i>Research Intern</i>
NVIDIA AI, Toronto, Canada
Mentor: Sanja Fidler | July 2021 - Expected September 2021 |
| 2. <i>Research Intern</i>
NVIDIA AI, Toronto, Canada
Mentor: Sanja Fidler | February 2021 - April 2021 |
| 3. <i>Research Intern</i>
Adobe Research, Seattle, WA
Mentors: Noam Aigerman, Siddhartha Chaudhuri, Vova Kim | June 2019 - August 2019 |
| 4. <i>Visiting Researcher</i>
École polytechnique, Palaiseau, France
Mentor: Maks Ovsjanikov | June 2018 - January 2019 |

INVITED TALKS

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|---|----------------|
| 1. Autodesk AI
<i>Generative Models for Stylized Geometry</i> | March 2021 |
| 2. NVIDIA AI, Toronto
<i>3D Modeling for Everyone</i> | October 2020 |
| 3. GAMES, China
<i>3D Modeling for Everyone</i> | September 2020 |
| 4. TOMOGRAPH, Waterloo, ON
<i>Neural Subdivision</i> | December 2019 |
| 5. Autodesk Research, Toronto, ON
<i>Cubic Stylization</i> | November 2019 |
| 6. Adobe Research, Seattle, WA
<i>Spectral Coarsening of Geometric Operator</i> | August 2019 |
| 7. University of Washington, Seattle, WA
<i>Spectral Coarsening of Geometric Operators</i> | July 2019 |
| 8. Fields Institute, Toronto, ON
<i>Paparazzi: Surface Editing by way of Multi-View Image Processing</i> | May 2019 |
| 9. Vector Institute, Toronto, ON
<i>Pixel Norm-Balls: Parametric Adversaries using an Analytically Differentiable Renderer</i> | March 2019 |

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| 10. École Polytechnique, Palaiseau, France | October 2018 |
| <i>Paparazzi: Surface Editing by way of Multi-View Image Processing</i> | |
| 11. Google | August 2018 |
| <i>A Differentiable Renderer for Image-Driven Shape Optimization</i> | |
| 12. École Polytechnique, Palaiseau, France | July 2018 |
| <i>A Differentiable Renderer for Image-Driven Shape Optimization</i> | |
| 13. University of Toronto, Toronto, ON | April 2017 |
| <i>From Intrinsic to Extrinsic Shape Analysis</i> | |

TEACHING

SIGGRAPH

- | | |
|--|------|
| <i>Co-Lecturer</i> : An Introduction to Deep Learning on Meshes | 2021 |
| Symposium on Geometry Processing | |
| <i>Co-Lecturer</i> : An Introduction to Geometry Processing Programming in MATLAB with gptoolbox | 2021 |
| Summer Geometry Institute | |
| <i>Lecturer</i> : Shape Deformation | 2021 |
| University of Toronto | |
| <i>Substitute Lecturer</i> : CSC2520 Geometry Processing | 2020 |
| <i>Substitute Lecturer</i> : CSC2521 Seminar in Geometry and Animation | 2019 |
| <i>Teaching Assistant</i> : CSC2549 Physics-Based Animation | 2019 |
| Carnegie Mellon University | |
| <i>Teaching Assistant</i> : 24-785 Engineering Optimization | 2016 |

PROFESSIONAL ACTIVITIES

Toronto Geometry Colloquium

Co-organizing a weekly webseries to promote young researchers and researchers from underrepresented communities. (<https://toronto-geometry-colloquium.github.io>)

Conference Program Committee

Eurographics (2020, 2021), Pacific Graphics (2020, 2021), Shape Modelling International (2020, 2021), Graphics Interface (2020)

Reviewer

SIGGRAPH (2020, 2021), SIGGRAPH Asia (2019, 2020), ACM Transactions on Graphics (2021), Eurographics (2020, 2021), Computer Graphics Forum (2021), UIST (2020), TVCG (2021), Pacific Graphics (2019, 2020), Computer Graphics and Applications (2020), Graphics Interface (2020), Computer Animation and Virtual Worlds (2019), Computer-Aided Design (2021)