

Alec Jacobson Curriculum Vitæ

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Academic Positions

Associate Professor (with tenure), 2022–*present*
Department of Computer Science
Department of Mathematics (courtesy)
University of Toronto

Senior Research Scientist, 2021–*present*
Adobe Research Toronto

Faculty Member, 2025–*present* Vector Institute

Faculty Affiliate, 2020–2025 Vector Institute

Assistant Professor, 2016–2022
Department of Computer Science
University of Toronto

Canada Research Chair in Geometry Processing, 2017–*present*

Postdoctoral Fellow, 2014–2016
Department of Computer Science
Columbia University

Postdoctoral Fellow, 2013–2014
Department of Computer Science
Eidgenössische Technische Hochschule Zürich (ETH Zurich)

Education

PhD in Computer Science, 2013
ETH Zurich
Thesis: *Algorithms and Interfaces for Real-Time Deformation of 2D and 3D Shapes*
Advisor: Olga Sorkine-Hornung

MA in Computer Science, 2011
Courant Institute, New York University
Advisors: Olga Sorkine-Hornung, Denis Zorin

BA with joint major in Mathematics and Computer Science, 2009
Courant Institute, New York University
Advisor: Denis Zorin

Awards and Honors

2024 ACM SIGGRAPH Test of Time Award

- 2024 Symposium on Geometry Processing Best Paper, Honourable Mention
- 2023 CS-Can/Info-Can Outstanding Early Career Computer Science Research Award
- 2023 Outstanding Teaching Award
- 2022 Canada Research Chair renewal
- 2022 Sloan Research Fellowship
- 2022 ACM SIGGRAPH North America, Best Paper Award
- 2021 ICCV, Sketching for Human Expressively Workshop, Best Paper Award
- 2020 ACM SIGGRAPH Significant New Researcher Award
- 2020 ACM Distinguished Speaker
- 2020 NeurIPS Top 10% Reviewer
- 2019 Ontario Early Researcher Award
- 2019 Eurographics Best Paper, Honourable mention
- 2018 Back cover image on *Proceedings of ACM SIGGRAPH North America*
- 2018 Computer Graphics Forum Cover Image
- 2018 Graphics Interface Best Poster Award
- 2017 Eurographics Significant Young Researcher Award
- 2017 Canada Research Chair
- 2017 Eurographics/ACM Symposium on Geometry Processing Dataset Award
- 2017 Eurographics Junior Fellow
- 2017 NSERC Discovery Accelerator Supplement (1 of 125 across Canada)
- 2017 ACM SIGGRAPH/Eurographics Symposium on Computer Animation Best Poster Award
- 2016 Connaught New Researcher
- 2015 Eurographics/ACM Symposium on Geometry Processing Software Award
- 2015 US Junior Oberwolfach Fellow
- 2015 NYCASCENT Fellow
- 2015 Back cover image on *Proceedings of ACM SIGGRAPH Asia*
- 2014 Eurographics Best PhD Thesis
- 2014 Heidelberg Laureate Forum Young Researcher
- 2013 ETH Medal for Outstanding Doctoral Dissertation, *top 8% university-wide*
- 2013 Intel PhD Fellowship
- 2011 Back cover image on *Proceedings of ACM SIGGRAPH North America*
- 2009 New York University Henry M. MacCracken Fellowship (3 years)
- 2009 Grand Prize, Games For Learning Institute Game Design Challenge
- 2009 New York University Founder's Day Award

Research Funding

2025	Adobe gift
2024	Adobe gift
2023	Adobe gift
2023	LEAF+ \$10,000
2022	Adobe gift
2022	NSERC Discovery \$370,000 CAD
2022	DSI Catalyst Grant \$100,000 CAD
2022	Sloan Research Fellowship \$75,000 USD
2021	Fields Institute, FURSP <i>four summer undergraduate research fellows</i>
2021	Fields Institute <i>Symposium on Geometry Processing Funding</i> \$10,000 CAD
2020	Fields Institute, FURSP <i>four summer undergraduate research fellows</i>
2020	Fields Institute <i>Hackathon Funding</i> \$15,000 CAD
2019–2020	SSHRC-CRSH New Frontiers in Research Fund <i>11.9% acceptance rate</i> \$250,000 CAD
2019	Autodesk gift
2019	Ontario Early Researcher Award \$140,000 CAD
2019	Facebook Oculus Hardware gift
2019	Fields Institute <i>Workshop Funding</i> \$25,000 CAD
2018–2020	Fields Institute CQAM Lab \$160,000 CAD
2018	Mitacs Globalink Research Award - Campus France \$3,500 CAD
2018	Autodesk gift
2018	MESH Inc. gift
2018	Fields Institute <i>Workshop Funding</i>

	\$25,000 CAD
2018	NSERC USRA <i>one summer undergraduate research fellow</i>
2018	Fields Institute, FURSP <i>three summer undergraduate research fellows</i>
2018	Engineering Science Research Opportunities Fund <i>one summer undergraduate research fellow</i>
2018	Fields Institute <i>one visiting faculty researcher</i> \$3,500 CAD
2017–2022	NSERC Discovery, RGPIN-2017–05235 \$155,000 CAD
2017–2020	NSERC Discovery Accelerator Supplement, RGPAS-2017–507938 \$120,000 CAD
2017–2022	Canada Research Chair \$158,335 CAD
2017–2018	Fields Institute <i>one visiting faculty researcher</i> \$10,500 CAD
2017	Fields Institute, FURSP <i>four summer undergraduate research fellows</i>
2017	NSERC USRA <i>one summer undergraduate research fellow</i>
2016–present	Adobe Systems gift
2016–2017	Connaught New Researcher Award \$10,000 CAD
2015	SGP Software Award €1,000 EUR
2014	US Junior Oberwolfach Fellow €200 EUR
2012	Intel Doctoral Student Honor Programme \$35,000 USD

ACM SIGGRAPH Publications

1. Chenxi Liu, Selena Ling, **Alec Jacobson**. “GimmBO: Interactive Generative Image Model Merging via Bayesian Optimization,” *ACM SIGGRAPH (North America)*, 2026.
2. Yuta Noma, **Alec Jacobson**, Karan Singh. “Medial Sphere Preconditioning for Knot Untangling and Volume-Filling Curves,” *ACM SIGGRAPH (Asia)*, 2025.
3. Hossein Baktash, Nicholas Sharp, Qingnan Zhou, **Alec Jacobson**, Keenan Crane. “Putting Rigid Bodies to Rest,” *ACM SIGGRAPH (North America)*, 2025.

4. Elie Michel, **Alec Jacobson**, Siddhartha Chaudhuri, Jean-Marc Thiery. "Variational Green and Biharmonic Coordinates for 2D Polynomial Cages," *ACM SIGGRAPH (North America)*, 2025.
5. Selena Ling, Merlin Nimier-David, **Alec Jacobson**, Nicholas Sharp. "Stochastic Preconditioning for Neural Field Optimization," *ACM SIGGRAPH (North America)*, 2025.
6. Lily Goli, Sara Sabour, George Kopanas, Mark Matthews, Dmitry Lagun, Leonidas Guibas, **Alec Jacobson**, David J. Fleet, Andrea Tagliasacchi. "SpotlessSplats: Ignoring Distractors in 3D Gaussian Splatting," *ACM Transactions on Graphics* (conditionally accepted), 2025.
7. Yuta Noma, Silvia Sellán, Nicholas Sharp, Karan Singh, **Alec Jacobson**. "Surface-Filling Curve Flows via Implicit Medial Axes," *ACM SIGGRAPH North America*, 2024.
8. Honglin Chen, Hsueh-Ti Derek Liu, David I.W. Levin, Changxi Zheng, **Alec Jacobson**. "Stabler Neo-Hookean Simulation: Absolute Eigenvalue Filtering for Projected Newton," *ACM SIGGRAPH North America*, 2024.
9. Yong Li, Shoaib Kamil, Keenan Crane, **Alec Jacobson**, Yotam Gingold. "I♥Mesh: A DSL for Mesh Processing," *ACM Transactions on Graphics*, 2024.
10. Yun-Chun Chen, Selena Ling, Zhiqin Chen, Vladimir G. Kim, Matheus Gadelha, **Alec Jacobson**. "Text-guided Controllable Mesh Refinement for Interactive 3D Modeling," *ACM SIGGRAPH Asia*, 2024.
11. Siqi Wang, Chenxi Liu, Daniele Panozzo, Denis Zorin, **Alec Jacobson**. "Bézier Spline Simplification Using Locally Integrated Error Metrics," *ACM SIGGRAPH Asia*, 2023.
12. Honglin Chen, Hsueh-Ti Derek Liu, **Alec Jacobson**, David I.W. Levin, Changxi Zheng. "Trust-Region Eigenvalue Filtering for Projected Newton," *ACM SIGGRAPH Asia*, 2024.
13. Dylan Rowe, **Alec Jacobson**, Oded Stein. "Sharpening and Sparsifying with Surface Hessians," *ACM SIGGRAPH Asia*, 2024.
14. Silvia Sellán, **Alec Jacobson**. "Neural Stochastic Screened Poisson Surface Reconstruction," *ACM SIGGRAPH Asia*, 2023.
15. Zoë Marschner, Silvia Sellán, Hsueh-Ti Derek Liu, **Alec Jacobson**. "Constructive Solid Geometry on Neural Signed Distance Fields," *ACM SIGGRAPH Asia*, 2023.
16. Towaki Takikawa, Thomas Müller, Merlin Nimier-David, Alex Evans, Sanja Fidler, **Alec Jacobson**, Alexander Keller. "Compact Neural Graphic Primitives with Learned Hash Probing," *ACM SIGGRAPH Asia*, 2023.
17. Seungbae Bang, Kirill Serkh, Oded Stein, **Alec Jacobson**. "An Adaptive Fast-Multipole-Accelerated Hybrid Boundary Integral Equation Method for Accurate Diffusion Curves," *ACM SIGGRAPH Asia*, 2023.
18. Jiayi Eris Zhang, Jérémie Dumas, Yun (Raymond) Fei, **Alec Jacobson**, Doug L. James, Danny M. Kaufman. "Progressive Shell Quasistatics for Unstructured Meshes," *ACM SIGGRAPH Asia*, 2023.
19. Nicholas Sharp, Cristian Romero Garcia, David Levin, **Alec Jacobson**, Etienne Vouga, Paul Kry, Justin Solomon. "Data-Free Learning of Reduced-Order Kinematics," *ACM SIGGRAPH (North America)*, 2023.
20. Xiaochun Tong, Hsueh-Ti Derek Liu, Yotam Gingold, **Alec Jacobson**. "Differentiable Heightfield Path Tracing with Accelerated Discontinuities," *ACM SIGGRAPH (North America)*, 2023.
21. Otman Benckekroun, Jiayi Eris Zhang, Siddhartha Chaudhuri, Eitan Grinspun, Yi Zhou, **Alec Jacobson**. "Fast Complementary Dynamics via Skinning Eigenmodes," *ACM SIGGRAPH (North America)*, 2023.
22. Hsueh-Ti Derek Liu, Benjamin Chislett, Mark Gillespie, Nick Sharp, **Alec Jacobson**, Keenan Crane. "Surface Simplification using Intrinsic Error Metrics," *ACM SIGGRAPH (North America)*, 2023.
23. Yun-Chun Chen, Vladimir G. Kim, Noam Aigerman, **Alec Jacobson**. "Neural Progressive Meshes," *ACM SIGGRAPH (North America)*, 2023.

24. Marzia Riso, Giacomo Nazzaro, Enrico Puppo, **Alec Jacobson**, Qingnan Zhou, Fabio Pellacini. "BoolSurf : Boolean Operations on Surfaces," *ACM Transactions on Graphics (Proc. SIGGRAPH Asia)*, 2022.
25. Jiayi Eris Zhang, Jérémie Dumas, Yun (Raymond) Fei, **Alec Jacobson**, Doug L. James, Danny M. Kaufman. "Progressive Simulation for Cloth Quasistatics," *ACM Transactions on Graphics (Proc. SIGGRAPH Asia)*, 2022.
26. Yong Li, Shoaib Kamil, **Alec Jacobson**, Yotam Gingold. "H♥rtDown: Document Processor for Executable Linear Algebra Papers," *ACM SIGGRAPH Asia*, 2022.
27. Silvia Sellán, **Alec Jacobson**. "Stochastic Poisson Surface Reconstruction," *ACM Transactions on Graphics (Proc. SIGGRAPH Asia)*, 2022.
28. Silvia Sellán, Jack Luong, Leticia Mattos Da Silva, Aravind Ramakrishnan, Yuchuan Yang, **Alec Jacobson**. "Breaking Good: Fracture Modes for Realtime Destruction," *ACM Transactions on Graphics*, 2022.
29. Towaki Takikawa, Alex Evans, Jonathan Tremblay, Thomas Müller, Morgan McGuire, **Alec Jacobson**, Sanja Fidler. "Variable Bitrate Neural Fields," *ACM SIGGRAPH North America*, 2022.
30. Hsueh-Ti Derek Liu, Francis Williams, **Alec Jacobson**, Sanja Fidler, Or Litany. "Learning Smooth Neural Functions via Lipschitz Regularization," *ACM SIGGRAPH North America*, 2022.
31. Nicholas Sharp, **Alec Jacobson**. "Spelunking the Deep: Guaranteed Queries for General Neural Implicit Surfaces," *ACM Transactions on Graphics (Proc. SIGGRAPH North America)*, 2022.
32. Yong Li, Shoaib Kamil, **Alec Jacobson**, Yotam Gingold. "I♥LA: Compilable Markdown for Linear Algebra," *ACM Transactions on Graphics (Proc. SIGGRAPH Asia)*, 2021.
33. Baptiste Nicolet, **Alec Jacobson**, Wenzel Jakob. "Large Steps in Inverse Rendering of Geometry," *ACM Transactions on Graphics (Proc. SIGGRAPH Asia)*, 2021.
34. Silvia Sellán, Noam Aigerman, **Alec Jacobson**. "Swept Volumes via Spacetime Numerical Continuation," *ACM Transactions on Graphics (Proc. SIGGRAPH North America)*, 2021.
Patent Filed.
35. Hsueh-Ti Derek Liu, Jiayi Eris Zhang, Mirela Ben Chen, **Alec Jacobson**. "Surface Multigrid via Intrinsic Prolongation," *ACM Transactions on Graphics (Proc. SIGGRAPH North America)*, 2021.
36. Rinat Abdrashitov, Seungbae Bang, David I.W. Levin, **Alec Jacobson**. "Interactive Modelling of Volumetric Musculoskeletal Anatomy," *ACM Transactions on Graphics (Proc. SIGGRAPH North America)*, 2021.
37. Jiayi Eris Zhang, Seungbae Bang, David I.W. Levin, **Alec Jacobson**. "Complementary Dynamics," *ACM Transactions on Graphics (Proc. SIGGRAPH Asia)*, 2020.
38. Silvia Sellán, Jacob Kesten, Ang Yan Sheng, **Alec Jacobson**. "Opening and Closing Surfaces," *ACM Transactions on Graphics (Proc. SIGGRAPH Asia)*, 2020.
39. 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.
40. Hsueh-Ti Derek Liu, Vladimir G. Kim, Siddhartha Chaudhuri, Noam Aigerman, **Alec Jacobson**. "Neural Subdivision," *ACM Transactions on Graphics (Proc. SIGGRAPH North America)*, 2020.
Patent: US11257290.
41. Silvia Sellán, Noam Aigerman, **Alec Jacobson**. "Developability of Heightfields via Rank Minimization," *ACM Transactions on Graphics (Proc. SIGGRAPH North America)*, 2020.
Patent: US11080819.
42. Oded Stein, **Alec Jacobson**, Max Wardetzky, Eitan Grinspun. "A Smoothness Energy without Boundary Distortion for Curved Surfaces," *ACM Transactions on Graphics*, 2020.
43. Hsueh-Ti Derek Liu, **Alec Jacobson**. "Cubic Stylization," *ACM Transactions on Graphics (Proc. SIGGRAPH Asia)*, 2019.

44. Dario Seyb, **Alec Jacobson**, Derek Nowrouzezahrai, Wojciech Jarosz. "Non-linear sphere tracing for rendering deformed signed distance fields," *ACM Transactions on Graphics (Proc. SIGGRAPH Asia)*, 2019.
45. Hsueh-Ti Derek Liu, **Alec Jacobson**, Maks Ovsjanikov. "Spectral Coarsening for Geometric Operators," *ACM Transactions on Graphics (Proc. SIGGRAPH North America)*, 2019.
46. Yixin Hu, Teseo Schneider, Xifeng Gao, Qingnan Zhou, **Alec Jacobson**, Denis Zorin, Daniele Panozzo. "TriWild: Robust Triangulation with Curve Constraints." *ACM Transactions on Graphics (Proc. SIGGRAPH North America)*, 2019.
47. Rinat Abdrashitov, **Alec Jacobson**, Karan Singh. "A System for Efficient 3D Printed Stop-Motion Face Animation," *ACM Transactions on Graphics*, 2019.
48. 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.
49. Gavin Barill, Nia G. Dickson, Ryan Schmidt, David I.W. Levin, **Alec Jacobson**. "Fast Winding Numbers for Soups and Clouds," *ACM Transactions on Graphics (Proc. SIGGRAPH North America)*, 2018.
50. Yixin Hu, Qingnan Zhou, Xifeng Gao, **Alec Jacobson**, Denis Zorin, Daniele Panozzo. "Tetrahedral Meshing in the Wild," *ACM Transactions on Graphics (Proc. SIGGRAPH North America)*, 2018.
51. Oded Stein, Eitan Grinspun, Max Wardetzky, **Alec Jacobson**. "Natural Boundary Conditions for Smoothing in Geometry Processing," *ACM Transactions on Graphics*, 2018.
52. Songrun Liu, Zachary Ferguson, **Alec Jacobson**, Yotam Gingold. "Seamless: Seam erasure and seam-aware decoupling of shape from mesh resolution," *ACM Transactions on Graphics (Proc. SIGGRAPH Asia)*, 2017.
53. Qingnan Zhou, Eitan Grinspun, Denis Zorin, **Alec Jacobson**. "Mesh Arrangements for Solid Geometry," *ACM Transactions on Graphics (Proc. SIGGRAPH North America)*, 2016.
54. Akash Garg, **Alec Jacobson**, Eitan Grinspun. "Computational Design of Reconfigurables," *ACM Transactions on Graphics (Proc. SIGGRAPH North America)*, 2016.
55. Oliver Glauser, Wan-Chun Ma, Daniele Panozzo, **Alec Jacobson**, Otmar Hilliges, Olga Sorkine-Hornung. "Rig Animation with a Tangible and Modular Input Device," *ACM Transactions on Graphics (Proc. SIGGRAPH North America)*, 2016.
56. Leonardo Sacht, Etienne Vouga, **Alec Jacobson**. "Nested Cages," *ACM Transactions on Graphics (Proc. SIGGRAPH Asia)*, 2015.
57. Yu Wang, **Alec Jacobson**, Jernej Barbič, Ladislav Kavan. "Linear Subspace Design for Real-Time Shape Deformation," *ACM Transactions on Graphics (Proc. SIGGRAPH North America)*, 2015.
58. Songrun Liu, **Alec Jacobson**, Yotam Gingold. "Skinning Cubic Bézier Splines and Catmull-Clark Subdivision Surfaces," *ACM Transactions on Graphics (Proc. SIGGRAPH Asia)*, 2014.
59. Daniel Sýkora, Ladislav Kavan, Martin Čadík, Ondřej Jamriška, **Alec Jacobson**, Brian Whited, Maryann Simmons, Olga Sorkine-Hornung. "Ink-and-Ray: Bas-Relief Meshes for Adding Global Illumination Effects to Hand-Drawn Characters," *ACM Transactions on Graphics*, 2014.
60. **Alec Jacobson**, Daniele Panozzo, Oliver Glauser, Cédric Pradalier, Otmar Hilliges, Olga Sorkine-Hornung. "Tangible and Modular Input Device for Character Articulation," *ACM Transactions on Graphics (Proc. SIGGRAPH North America)*, 2014.
61. **Alec Jacobson**, Ladislav Kavan, Olga Sorkine-Hornung. "Robust Inside-Outside Segmentation using Generalized Winding Numbers," *ACM Transactions on Graphics (Proc. SIGGRAPH North America)*, 2013.
62. Kaan Yücer, **Alec Jacobson**, Alexander Hornung, Olga Sorkine. "Transfusive Image Manipulation," *ACM Transactions on Graphics (Proc. SIGGRAPH Asia)*, 2012.

Patent: US9202431

63. **Alec Jacobson**, Ilya Baran, Ladislav Kavan, Jovan Popović, Olga Sorkine. “Fast Automatic Skinning Transformations,” *ACM Transactions on Graphics (Proc. SIGGRAPH North America)*, 2012.
64. **Alec Jacobson**, Olga Sorkine. “Stretchable and Twistable Bones for Skeletal Shape Deformation,” *ACM Transactions on Graphics (Proc. SIGGRAPH Asia)*, 2011.
65. **Alec Jacobson**, Ilya Baran, Jovan Popović, Olga Sorkine. “Bounded Biharmonic Weights for Real-Time Shape Deformation,” *ACM Transactions on Graphics (Proc. SIGGRAPH North America)*, 2011.

Additional Journal and Conference Proceedings Publications

66. Kinjal Parikh, Danny Kaufman, David Levin, **Alec Jacobson**. “Differentiable Variable Fonts,” *Eurographics*, 2026.
67. Yuta Noma, Zhecheng Wang, Chenxi Liu, Karan Singh, **Alec Jacobson**. “Mesh Processing Non-Meshes via Neural Displacement Fields,” *Eurographics*, 2026.
68. Lily Goli, Sara Sabour, Mark Matthews, Marcus Brubaker, Dmitry Lagun, **Alec Jacobson**, David J. Fleet, Saurabh Saxena, Andrea Tagliasacchi. “RoMo: Robust Motion Segmentation Improves Structure from Motion,” *ICCV*, 2025.
69. Chenxi Liu, Selena Ling, **Alec Jacobson**. “Interactive T2I LoRA Merging with Human-in-the-Loop Bayesian Optimization,” *ICCV Workshop on Human-Interactive Generation and Editing*, 2025.
70. Selena Ling, Abhishek Madan, Nicholas Sharp, **Alec Jacobson**. “Uniform Sampling of Surfaces by Casting Rays,” *Symposium on Geometry Processing*, 2025.
71. Aravind Ramakrishnan, David I.W. Levin, **Alec Jacobson**. “Rigid Body Adversarial Attacks,” *3DV*, 2025.
72. Chenxi Liu, Siqi Wang, Matthew Fisher, Deepali Aneja, **Alec Jacobson**. “2D Neural Fields with Learned Discontinuities,” *Eurographics*, 2025.
73. Leonardo Sacht, **Alec Jacobson**. “Cascading Upper Bounds for Triangle Soup Pompeiu-Hausdorff Distance,” *Eurographics/ACM SIGGRAPH Symposium on Geometry Processing*, 2024.
Best Paper, Honorable Mention.
74. **Alec Jacobson**. “Optimized Dual-Volumes for Tetrahedral Meshes,” *Eurographics/ACM SIGGRAPH Symposium on Geometry Processing*, 2024.
75. **Alec Jacobson**. “Gender Diversity of Graphics Conference Leadership,” *ACM SIGGRAPH North America ‘Talks’*, 2024.
76. Vikas Thamizharasan, Difan Liu, Shantanu Agarwal, Matthew Fisher, Michael Gharbi, Oliver Wang, **Alec Jacobson**, Evangelos Kalogerakis. “VecFusion: Vector Font Generation with Diffusion,” *CVPR*, 2024.
Highlight.
77. Lily Goli, Cody Reading, Silvia Sellán, **Alec Jacobson**, Andrea Tagliasacchi. “Bayes’ Rays: Uncertainty Quantification for Neural Radiance Fields,” *CVPR*, 2024.
Highlight.
78. Kunho Kim, Mikaela Angelina Uy, Despoina Paschalidou, **Alec Jacobson**, Leonidas Guibas, Minhyuk Sung. “OptCtrlPoints: Optimizing Control Points for Biharmonic 3D Shape Deformation,” *Pacific Graphics*, 2023.
79. Selena Ling, Nicholas Sharp, **Alec Jacobson**. “VectorAdam for Rotation Equivariant Geometry Optimization,” *Neural Information Processing Systems*, 2022.
80. Silvia Sellán, Yun-Chun Chen, Ziyi Wu, Animesh Garg, **Alec Jacobson**. “Breaking Bad: A Dataset for Geometric Fracture and Reassembly,” *Neural Information Processing Systems (Datasets & Benchmarks Track)*, 2022.

81. Yun-Chun Chen, Haoda Li, Dylan Turpin, **Alec Jacobson**, Animesh Garg. "Neural Shape Mating: Self-Supervised Object Assembly with Adversarial Shape Priors," *CVPR*, 2022.
82. Xinhao Cai, Eulalie Coevoet, **Alec Jacobson**, Paul Kry. "Active Learning Neural C-space Signed Distance Fields for Reduced Deformable Self-Collision," *Graphics Interface*, 2022.
83. Josh Holinaty, **Alec Jacobson**, Fanny Chevalier. "Supporting Reference Imagery for Digital Drawing", *ICCV Workshop on Sketching for Human Expressivity*, 2021.
84. Yong Li, Shoaib Kamil, **Alec Jacobson**, Yotam Gingold. "I♥LA: Compilable Markdown for Linear Algebra," *ICLR Workshop on Rethinking ML Papers*, 2021.
85. Hsueh-Ti Derek Liu, **Alec Jacobson**. "Normal-Driven Spherical Shape Analogies," *Computer Graphics Forum (Proc. SGP)*, 2021.
86. Towaki Takikawa, Joey Litalien, Kangxue Yin, Karsten Kreis, Charles Loop, Derek Nowrouzezahrai, **Alec Jacobson**, Morgan McGuire, Sanja Fidler. "Neural Geometric Level of Detail: Real-time Rendering with Implicit 3D Shapes," *CVPR*, 2021.

Oral

87. Sarah Kushner, Risa Ulinski, Karan Singh, David I.W. Levin, **Alec Jacobson**. "Levitating Rigid Objects with Hidden Rods and Wires", *Computer Graphics Forum (Proc. Eurographics)*, 2021.
88. Jiayi Eris Zhang, **Alec Jacobson**, Marc Alexa. "Fast Updates for Least-Squares Rotational Alignment," *Computer Graphics Forum (Proc. Eurographics)*, 2021.
89. Ludwig Wilhelm Wall, **Alec Jacobson**, Daniel Vogel, Oliver Schneider. "Scrappy: Using Scrap Material as Infill to Make Fabrication More Sustainable", *ACM Conference on Human Factors in Computing Systems*, 2021.
90. Vismay Modi, Lawson Fulton, Shinjiro Sueda, **Alec Jacobson**, David I.W. Levin. "EMU: Efficient Muscle Simulation in Deformation Space," *Computer Graphics Forum*, 2020.
91. Jun Gao, Wenzheng Chen, Tommy Xiang, Morgan McGuire, **Alec Jacobson**, Sanja Fidler. "Learning Deformable Tetrahedral Meshes for 3D Reconstruction," *Neural Information Processing Systems*, 2020.
92. Josef Graus, **Alec Jacobson**, Yotam Gingold. "Interacting with Self-Similarity," *Computer-Aided Design*, 2020.
93. Oded Stein, Max Wardetzky, **Alec Jacobson**, Eitan Grinspun. "A Simple Discretization of the Vector Dirichlet Energy," *Computer Graphics Forum (Proc. SGP)*, 2020.
94. Thibault Lescoat, Hsueh-Ti Derek Liu, Jean-Marc Thiery, **Alec Jacobson**, Tamy Boubekeur, Maks Ovsjanikov. "Spectral Mesh Simplification," *Computer Graphics Forum (Proc. Eurographics)*, 2020.
95. Wenzheng Chen, Jun Gao, Huan Ling, Edward J. Smith, Jaakko Lehtinen, **Alec Jacobson**, Sanja Fidler. "Learning to Predict 3D Objects with an Interpolation-based Differentiable Renderer," *Neural Information Processing Systems*, 2019.
96. **Alec Jacobson**. "RodSteward: A Design-to-Assembly System for Fabrication using 3D-Printed Joints and Precision-Cut Rods," *Computer Graphics Forum (Proc. Pacific Graphics)*, 2019.
97. 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 Representations*, 2019.
98. Lawson Fulton, Vismay Modi, David Duvenaud, David I.W. Levin, **Alec Jacobson**. "Latent-space Dynamics for Reduced Deformable Simulation", *Computer Graphics Forum (Proc. Eurographics)*, 2019.
99. Silvia Sellán, Heng Yi Cheng, Yuming Ma, Mitchell Dembowski, **Alec Jacobson**. "Solid Geometry Processing on Deconstructed Domains," *Computer Graphics Forum*, 2019.
(presented at SGP 2019)

100. Oded Stein, **Alec Jacobson**, Eitan Grinspun. "Interactive Design of Castable Shapes using Two-Piece Rigid Molds," *Computers & Graphics*, 2019.
101. Rahul Arora, **Alec Jacobson**, Timothy Richard Langlois, Karan Singh, David I.W. Levin. "Volumetric Michell Trusses for Parametric Design & Fabrication," *Symposium on Computational Fabrication*, 2019.
102. Timothy Jeruzalski, John Kanji, **Alec Jacobson**, David I.W. Levin. "Error Bounded Online Compression of Rigid Body Simulations," *Computer Graphics Forum (Proc. SCA)*, 2018.
103. Marek Dvorožňák, Saman Sepehri Nejad, **Alec Jacobson**, Ondřej Jamriška, Ladislav Kavan, Daniel Šykora. "Seamless Reconstruction of Part-Based High-Relief Models from Hand-Drawn Images," *Expressive*, 2018.
104. **Alec Jacobson**. "Generalized Matryoshka: Computational Design of Nesting Objects," *Computer Graphics Forum (Proc. SGP)*, 2017.
105. Hsueh-Ti Derek Liu, **Alec Jacobson**, Keenan Crane. "A Dirac Operator for Extrinsic Shape Analysis," *Computer Graphics Forum (Proc. SGP)*, 2017.
106. Jean-Charles Bazin, Claudia Plüss, Guo Yu, Tobias Martin, **Alec Jacobson**, Markus Gross. "Physically Based Video Editing," *Computer Graphics Forum (Proc. Pacific Graphics)*, 2016.
107. **Alec Jacobson**. "Breathing Life into Shapes," *Computer Graphics & Applications: Dissertation Impact*, 2015. **Invited by James D. Foley**
108. Romain Prévost, **Alec Jacobson**, Wojciech Jarosz, Olga Sorkine-Hornung. "Large-Scale Spray Painting of Photographs by Interactive Optimization," *Computers & Graphics*, 2015
109. **Alec Jacobson**, Ilya Baran, Jovan Popović, Olga Sorkine. "Bounded Biharmonic Weights for Real-Time Shape Deformation," *Communications of the ACM: Research Highlights*, 2014. **Preface by Joe Warren, 中国版 translated by Kun Zhou**
110. David Günther, **Alec Jacobson**, Jan Reininghaus, Hans-Peter Seidel, Olga Sorkine-Hornung, Tino Weinkauff. "Fast and Memory-Efficient Topological Denoising of 2D and 3D Scalar Fields," *IEEE Transactions on Visualization and Computer Graphics (Proc. SciVis)*, 2014.
111. Kenshi Takayama, **Alec Jacobson**, Ladislav Kavan, Olga Sorkine-Hornung. "A Simple Method for Correcting Facet Orientations in Polygon Meshes Based on Ray Casting," *Journal of Computer Graphics Techniques*, 2014.
112. **Alec Jacobson**. "Bijective Mappings with Generalized Barycentric Coordinates: a Counterexample," *Journal of Graphics Tools*, 2013.
113. Leonardo Sacht, **Alec Jacobson**, Daniele Panozzo, Christian Schüller, Olga Sorkine-Hornung. "Consistent Volumetric Discretizations Inside Self-Intersecting Surfaces," *Computer Graphics Forum (Proc. SGP)*, 2013.
114. **Alec Jacobson**, Tino Weinkauff, Olga Sorkine. "Smooth Shape-Aware Functions with Controlled Extrema," *Computer Graphics Forum (Proc. SGP)*, 2012.
115. **Alec Jacobson**, Elif Tosun, Olga Sorkine, Denis Zorin. "Mixed Finite Elements for Variational Surface Modeling," *Computer Graphics Forum (Proc. SGP)*, 2010.

Juried Demos, Workshop Courses, Posters, & Technical Reports

116. Sarah Kushner, Paul H. Dietz, **Alec Jacobson**. "Interactive 3D Zoetrope with a Strobing Flashlight," *ACM User Interface Software and Technology Symposium Demos*, 2022.
117. jacobson_rp_2021

118. Towaki Takikawa, Joey Litalien, Kangxue Yin, Karsten Kreis, Charles Loop, Derek Nowrouzezahrai, **Alec Jacobson**, Morgan McGuire, Sanja Fidler. "Neural Geometric Level of Detail: Real-time Rendering with Implicit 3D Shapes," *Technical Report*, 2021.
119. Thomas Davies, Derek Nowrouzezahrai, **Alec Jacobson**. "On the Effectiveness of Weight-Encoded Neural Implicit 3D Shapes," *Technical Report*, 2020.
120. Wenzheng Chen, Jun Gao, Huan Ling, Edward J. Smith, Jaakko Lehtinen, **Alec Jacobson**, Sanja Fidler. "Learning to Predict 3D Objects with an Interpolation-based Differentiable Renderer," *arXiv*, 2019.
121. **Alec Jacobson**. "RodSteward: A Design-to-Assembly System for Fabrication using 3D-Printed Joints and Precision-Cut Rods," *ACM Symposium on Computational Fabrication Posters & Short Talks*, 2019.
122. **Alec Jacobson**. "RodSteward: A Design-to-Assembly System for Fabrication using 3D-Printed Joints and Precision-Cut Rods," *arXiv*, 2019.
123. Oded Stein, **Alec Jacobson**, Max Wardetzky, Eitan Grinspun. "A mixed finite element method with piecewise linear elements for the biharmonic equation on surfaces," *arXiv*, 2019.
124. Oded Stein, **Alec Jacobson**, Max Wardetzky, Eitan Grinspun. "A Smoothness Energy without Boundary Distortion for Curved Surfaces," *arXiv*, 2019.
125. Rahul Arora, **Alec Jacobson**, Timothy R. Langlois, Yijiang Huang, Caitlin Mueller, Wojciech Matusik, Ariel Shamir, Karan Singh, David I.W. Levin. "Designing Volumetric Truss Structures for Computational Fabrication," *arXiv*, 2018.
126. Hsueh-Ti Derek Liu, Michael Tao, Chun-Liang Li, Derek Nowrouzezahrai, **Alec Jacobson**. "Adversarial Geometry and Lighting using a Differentiable Renderer," *Technical Report*, 2018.
127. Silvia Sellán, Heng Yi Cheng, Yuming Ma, Mitchell Dembowski, **Alec Jacobson**. "Solving PDEs on Deconstructed Domains," *Technical Report*, 2018.
128. Silvia Sellán, Heng Yi Cheng, Yuming Ma, Mitchell Dembowski, **Alec Jacobson**. "Solving PDEs on Deconstructed Domains," *Symposium on Geometry Processing Posters*, 2018.
129. **Alec Jacobson**. "libigl: Prototyping Geometry Processing Research in C++," *Graphics Interface Courses*, 2018.
130. Lawson Fulton, Vismay Modi, David Duvenaud, David I.W. Levin, **Alec Jacobson**. "Autodef: Non-linear Subspace Simulation for Large Deformation Elastodynamics," *Graphics Interface Posters*, 2018.
Best Poster Award.
131. Michelle Arkhangorodsky, Yanjun Jiang, **Alec Jacobson**. "Simplification for Large-Scale Fabrication," *Graphics Interface Posters*, 2018.
132. Andrew Nelles, **Alec Jacobson**. "Best-Fit Affine Progressive Meshes," *Graphics Interface Posters*, 2018.
133. Sarah Kushner, **Alec Jacobson**. "Example-Based Print Preview for Laser Cutting," *Graphics Interface Posters*, 2018.
134. Silvia Sellán, **Alec Jacobson**. "Solving PDEs on Overlapping Domains," *Graphics Interface Posters*, 2018.
135. Gavin Barill, Nia G. Dickson, Ryan Schmidt, David I.W. Levin, **Alec Jacobson**. "Fast Winding Numbers for Soups and Clouds," *Graphics Interface Posters*, 2018.
136. Rahul Arora, **Alec Jacobson**, Timothy Richard Langlois, Karan Singh, David I.W. Levin. "Designing Volumetric Truss Structures for Computational Fabrication," *Graphics Interface Posters*, 2018.
137. Timothy Jeruzalski, John Kanji, **Alec Jacobson**, David I.W. Levin. "Error Bounded Online Compression of Rigid Body Simulations," *Graphics Interface Posters*, 2018.

138. Rinat Abdrashitov, **Alec Jacobson**, Karan Singh. “f-Stop: A System for 3D Printed Stop-Motion Facial Animation,” *Graphics Interface Posters*, 2018.
139. Darren Moore, **Alec Jacobson**, David I.W. Levin. “Rigless Skinning for Interactive Vector Animation,” *Graphics Interface Posters*, 2018.
140. **Alec Jacobson**. “Human-Math Interaction,” *Computational Interactivity*, Report from Dagstuhl Seminar 17232, 2017.
141. Timothy Jeruzalski, Eugene Fiume, **Alec Jacobson**, David I.W. Levin. “Online Compression of Rigid Body Simulations using Physics-Inspired Interpolation,” *ACM SIGGRAPH Symposium on Computer Animation Posters*, 2017.
Best Poster Award.
142. **Alec Jacobson**, Daniele Panozzo. “libigl: Prototyping Geometry Processing Research in C++,” *ACM SIGGRAPH Asia Courses*, 2017.
143. **Alec Jacobson**, Daniele Panozzo. “libigl: Prototyping Geometry Processing Research in C++,” *Eurographics/ACM Symposium on Geometry Processing Courses*, 2017.
144. Oliver Glauser, Benedek Vartok, Wan-Chun Ma, Daniele Panozzo, **Alec Jacobson**, Otmar Hilliges, Olga Sorkine-Hornung. “Rig Animation with a Tangible and Modular Input Device,” *ACM User Interface Software and Technology Symposium Demos*, 2016.
145. Qingnan Zhou, **Alec Jacobson**. “Thing10K: A Dataset of 10000 3D-Printing Models”, *arXiv:1605.04797*, 2016
SGP 2017 Dataset Award
146. Akash Garg, **Alec Jacobson**, Eitan Grinspun. “Computational Design of Reconfigurables,” *Tristate Workshop on Imaging and Graphics Posters*, 2016.
147. Qingnan Zhou, **Alec Jacobson**. “Mesh Arrangements for Solid Geometry,” *Tristate Workshop on Imaging and Graphics Posters*, 2016.
148. Akash Garg, **Alec Jacobson**, Eitan Grinspun. “Computational Design of Reconfigurables,” *Symposium on Computational Fabrication Posters*, 2016.
149. Qingnan Zhou, **Alec Jacobson**. “Mesh Arrangements for Solid Geometry,” *Symposium on Computational Fabrication Posters*, 2016.
150. **Alec Jacobson**. “Boolean Operations using Generalized Winding Numbers,” Columbia University, 2016.
151. **Alec Jacobson**, Leonardo Sacht, Etienne Vouga. “Nested Cages,” *Oberwolfach Report: Discrete Differential Geometry*, 2015.
152. **Alec Jacobson**. “Skinning: Real-time Shape Deformation,” *Eurographics/ACM Symposium on Geometry Processing Invited Courses*, 2015.
153. Leonardo Sacht, Etienne Vouga, **Alec Jacobson**. “Nested Cages,” *Tristate Workshop on Imaging and Graphics Posters*, 2015.
154. Yu Wang, **Alec Jacobson**, Jernej Barbič, Ladislav Kavan. “Linear Subspace Design for Real-Time Shape Deformation,” *Tristate Workshop on Imaging and Graphics Posters*, 2015.
155. **Alec Jacobson**, Yotam Gingold. “Skinning: Real-time Shape Deformation,” *ACM SIGGRAPH Asia Invited Courses*, 2014.
156. **Alec Jacobson**, Zhigang Deng, Ladislav Kavan, J.P. Lewis. “Skinning: Real-time Shape Deformation,” *ACM SIGGRAPH Courses*, 2014.
157. Daniele Panozzo, **Alec Jacobson**. “libigl: A C++ Library for Geometry Processing without a Mesh Data Structure,” *Eurographics/ACM Symposium on Geometry Processing Courses*, 2014.

158. **Alec Jacobson**, Daniele Panozzo, Oliver Glauser, Cédric Pradalier, Otmar Hilliges, Olga Sorkine-Hornung. “Tangible and Modular Input Device for Character Articulation,” *ACM User Interface Software and Technology Symposium Demos*, 2014.
159. **Alec Jacobson**, Daniele Panozzo, Oliver Glauser, Cédric Pradalier, Otmar Hilliges, Olga Sorkine-Hornung. “Tangible and Modular Input Device for Character Articulation,” *ACM SIGGRAPH Emerging Technologies*, 2014.
160. Kenshi Takayama, **Alec Jacobson**, Ladislav Kavan, and Olga Sorkine-Hornung. “Consistently Orienting Facets in Polygon Meshes by Minimizing the Dirichlet Energy of Generalized Winding Numbers,” ETH Zurich, 2014.
161. **Alec Jacobson**. “Schur Complement Trick for Positive Semi-definite Energies,” Columbia University, 2014.
162. **Alec Jacobson**. “Bijective Mappings with Generalized Barycentric Coordinates: A Counterexample,” ETH Zurich, 2012.
163. **Alec Jacobson**, Olga Sorkine. “A Cotangent Laplacian for Images as Surfaces,” ETH Zurich, 2012.
164. Murphy Stein, **Alec Jacobson**, Yongming Hong. “Games for Learning Institute at NYU: Super Transformation,” *Games for Change Festival Demos*, 2010.

Open-source Projects

libigl: A Simple C++ Geometry Processing Library Alec Jacobson, Daniele Panozzo, and others	2013–present
gptoolbox: Geometry Processing Toolbox for MATLAB Alec Jacobson and others	2013–present
thingi10K: Ten Thousand 3D Models for Testing Robustness of Geometric Algorithms Qingnan Zhou and Alec Jacobson	2016–present

Employment

2022–present	University of Toronto	Associate Professor
2021–present	Adobe Research	Senior Research Scientist
2016–2022	University of Toronto	Assistant Professor
2019–2021	Adobe Research	Visiting Professor, Consultant
2014–2016	Columbia University Mentor: Eitan Grinspun	Postdoctoral researcher & co-instructor
2013–2014	ETH Zurich Mentor: Olga Sorkine-Hornung	Postdoctoral researcher & teaching assistant
2011–2013	ETH Zurich Advisor: Olga Sorkine-Hornung	Graduate researcher & teaching assistant
2010	Adobe Research Advisor: Jovan Popović	Summer research intern
2009–2011	New York University Advisors: Olga Sorkine-Hornung, Denis Zorin	Graduate researcher
2008–2009	New York University	Undergraduate researcher

	Advisors: Denis Zorin, Yotam Gingold	
2008	IBM Advisor: Chuck Wallace	Summer programming intern
2007	Mayo Clinic Advisor: Željko Bajzer	Summer research intern

Conference Talks

Eurographics/ACM SIGGRAPH Symposium on Geometry Processing <i>Optimized Dual-Volumes for Tetrahedral Meshes</i>	June 25, 2024
Eurographics/ACM SIGGRAPH Symposium on Geometry Processing (invited course) <i>libigl: Prototyping Geometry Processing Research in C++</i>	July 1, 2020
Pacific Graphics <i>RodSteward: A Design-to-Assembly System for Fabrication using 3D-Printed Joints and Precision-Cut Rods</i>	October, 17, 2019
Graphics Interface (invited talk) <i>Interactive Design of Castable Shapes Using Two-Piece Rigid Molds</i>	May 31, 2019
Graphics Interface (invited course) <i>libigl: Prototyping Geometry Processing Research in C++</i>	May 8, 2018
ACM SIGGRAPH Asia <i>libigl: Prototyping Geometry Processing Research in C++</i>	November 29, 2017
Eurographics/ACM SIGGRAPH Symposium on Geometry Processing <i>Generalized Matryoshka: Computational Design of Nesting Objects</i>	July 3, 2017
Eurographics/ACM SIGGRAPH Symposium on Geometry Processing (invited course) <i>libigl: Prototyping Geometry Processing Research in C++</i>	July 1, 2017
ACM SIGGRAPH North America <i>Computational Design of Reconfigurables</i>	July 27, 2016
Eurographics/ACM SIGGRAPH Symposium on Geometry Processing (invited course) <i>Skinning: Real-time Shape Deformation, "Direct Methods & Automatic Methods"</i>	June 18, 2016
Graphics Interface (invited talk) <i>Large-Scale Painting of Photographs by Interactive Optimization</i>	June 3, 2016
Eurographics/ACM SIGGRAPH Symposium on Geometry Processing (invited course) <i>Skinning: Real-time Shape Deformation, "Direct Methods & Automatic Methods"</i>	July 5, 2015
ACM SIGGRAPH Asia (invited course) <i>Skinning: Real-time Shape Deformation, "Automatic Methods"</i>	December 3, 2014
ACM SIGGRAPH North America <i>Skinning: Real-time Shape Deformation, "Automatic Methods"</i>	August 14, 2014
ACM SIGGRAPH North America <i>Tangible and Modular Input Device for Character Articulation</i>	August 12, 2014
Eurographics/ACM SIGGRAPH Symposium on Geometry Processing <i>libigl: A C++ Library for Geometry Processing without a Mesh Data Structure</i>	July 4, 2014
ACM SIGGRAPH North America	July 22, 2013

Robust Inside-Outside Segmentation using Generalized Winding Numbers

ACM SIGGRAPH North America

August 8, 2012

Fast Automatic Skinning Transformations

Eurographics/ACM SIGGRAPH Symposium on Geometry Processing

July 16, 2012

Smooth Shape-Aware Functions with Controlled Extrema

ACM SIGGRAPH Asia

December 14, 2011

Stretchable and Twistable Bones for Skeletal Shape Deformation

ACM SIGGRAPH North America

August 10, 2011

Bounded Biharmonic Weights for Real-Time Deformation

Eurographics/ACM SIGGRAPH Symposium on Geometry Processing

July 6, 2010

Mixed Finite Elements for Variational Surface Modeling

Invited Talks

International Conference on Geometric Modeling and Processing *Keynote*

May 29, 2025

The Triangle is Dead, Long Live the Triangle

invited by Tao Ju

Symposium on Geometry Processing *Keynote*

June 25, 2024

The Triangle is Dead, Long Live the Triangle

invited by Ruizhen Hu and Sylvain Lefebvre

ETH Zurich IGL Reunion Workshop *Keynote*

July 1, 2023

The First Pancake is Always Burnt

invited by Olga Sorkine-Hornung

KAIST Geometric and Visual Computing Workshop

December 5, 2022

Practical Neural Fields

invited by Minhyuk Sung, Min H. Kim

Teaching & Learning Community of Practice

March 8, 2022

Role-Playing in Paper-Reading Seminars

invited by Jessica Whitehead

Huawei Research: Recent Advances in Visual Media Content Generation

May 28, 2021

Moving Geometry by Looking at It

invited by Richard Zhang, Changqing Zou

Adobe Research

February 22, 2021

Complementary Digital Design

invited by Jovan Popović

AIA Symposium On Artificial Intelligence In Architecture, Engineering, And Construction

October 20, 2020

How do we get to ubiquitous 3D?

invited by Benjamin Dillenburger, Matthias Kohler

ACM SIGGRAPH Significant New Research Award Talk

August 23, 2020

Geometry in 2020

invited by John "Spike" Hughes

nVidia

July 29, 2020

Geometry Processing in the Wild

invited by Sanja Fidler, Jun Gao

TEDx University of Toronto <i>Keynote</i> <i>Geometry Processing in the Wild</i> invited by Tracy Barber, Sumana Dhanani	February 13, 2020
New York University <i>Cubic Stylization</i> invited by Daniele Panozzo	January 31, 2020
Dagstuhl Seminar on Interactive Design and Simulation <i>Spectral Coarsening of Geometric Operators</i> invited by Jörg Peters, Thomas Grandine, Ulrich Reif, Olga Sorkine-Hornung	December 17, 2019
AI For Engineering Summer School <i>Geometry Processing in the Wild</i> invited by Hesam Salehipour, Mike Haley	August 16, 2019
Beijing Film Academy <i>Geometry Processing in the Wild</i> invited by Baoquan Chen	July 28, 2019
Symposium on Art and A.I. <i>Toward Three-Dimensional Cinematography</i> invited by Pia Kleber, David Rokeby, Tamara Trojanowska	June 25, 2019
Shape Modeling International <i>Keynote</i> <i>Geometry Processing in the Wild</i> invited by Giuseppe Patanè, Raphaele Chaine	June 21, 2019
CVPR Workshop on Deep Generative Models for 3D Understanding <i>Geometry Processing in the Wild</i> invited by Xavier Snelgrove	June 17, 2019
Graphics Interface <i>Geometry Processing in the Wild</i> invited by Robert J. Teather, Andrea Tagliasacchi	May 30, 2019
Fields Institute Workshop on Robust Geometric Algorithms for Computational Fabrication II <i>Solid Geometry Processing on Deconstructed Domains</i> invited by Daniel Hambleton	May 3, 2019
University of Victoria <i>Geometry Processing in the Wild</i> invited by Andrea Tagliasacchi	April 18, 2019
University of British Columbia <i>Geometry Processing in the Wild</i> invited by Michiel van de Panne	April 17, 2019
National Research Council Canada, Computer Science Colloquium Series <i>Geometry Processing in the Wild</i> invited by Pengcheng Xi	April 16, 2019
Concordia University <i>Geometry Processing in the Wild</i> invited by Tiberiu Popa	March 12, 2019
Bellairs Workshop on Computer Animation <i>Moving Geometry by Looking at It</i> invited by Paul Kry	February 16, 2019

- Carnegie Mellon University, Robotics Institute Seminar** February 8, 2019
Geometry Processing in the Wild
invited by Keenan Crane
- CG Connect Toronto** November 27, 2018
Robust Geometry Processing: the Life Cycle of a Messy Shape
invited by Martin de Lasa, Laurence Cymet, and Nikola Milosevic
- Dagstuhl Seminar on Computational Aspects of Fabrication** October 26, 2018
Robust Geometry Processing: the Life Cycle of a Messy Shape
invited by Bernd Bickel, Marc Alexa, Kristina Shea, Jessica Hodgins
- Fields Institute Workshop on Robust Geometric Algorithms for Computational Fabrication** May 1, 2018
Fast Winding Numbers for Soups and Clouds
invited by Alla Sheffer, Olga Sorkine-Hornung
- George Mason University** April 26, 2018
Fast Winding Numbers for Soups and Clouds
invited by Yotam Gingold
- Bellairs Workshop on Computer Animation** February 10, 2018
From Reconfigurables to Matryoshka, Optimizing Shapes and Motions over Space-Time
invited by Paul Kry
- BIRS Workshop on Geometry & Computation for Interactive Simulation** September 25, 2017
From Reconfigurables to Matryoshka, Optimizing Shapes and Motions over Space-Time
invited by Jorg Peters, Ulrich Reif, and Dinesh Pai
- Dagstuhl Seminar on Computational Interactivity** June 6, 2017
Human Math Interaction
invited by Xiaojun Bi, Otmar Hilliges, Takeo Igarashi, and Antti Oulasvirta
- Graphics Interface** May 19, 2017
Breaking Barriers between Humans and Geometry
invited by Elmar Eisemann
- University of Waterloo** April 18, 2017
Robust Geometry Processing for Irregularly Bounded Domains
invited by Christopher Batty
- Bellairs Workshop on Computer Animation** February 4, 2017
Robust Geometry Processing for Irregularly Bounded Domains
invited by Paul Kry
- Toronto User Experience** October 25, 2016
Breaking Barriers between Humans and Geometry
invited by Daniel Wigdor
- Cornell University** March 22, 2016
Breaking Barriers between Humans and Geometry
invited by Steve Marschner
- Adobe Research** March 14, 2016
Breaking Barriers between Humans and Geometry
invited by David Salesin
- Purdue University** March 10, 2016
Breaking Barriers between Humans and Geometry
invited by Voicu Popescu

- University of Toronto** March 7, 2016
Breaking Barriers between Humans and Geometry
invited by Karan Singh
- University of Southern California** February 18, 2016
Breaking Barriers between Humans and Geometry
invited by Jernej Barbič
- UC Riverside** February 10, 2016
Breaking Barriers between Humans and Geometry
invited by K. K. Ramakrishnan
- University of Tokyo** October 30, 2015
Breaking Barriers between Humans and Geometry
invited by Takeo Igarashi
- Geometry Workshop in Seggau** July 12, 2015
Nested Cages
invited by Alexander I. Bobenko, Helmut Pottmann, and Johannes Wallner
- Oberwolfach Discrete Differential Geometry Workshop** March 5, 2015
Nested Cages
invited by Alexander I. Bobenko, Richard Kenyon and Peter Schröder
- City University of Hong Kong** December 9, 2014
From Model to Motion
invited by Hongbo Fu
- Visual Effects Society, London** September 17, 2014
Tangible and Modular Input Device for Character Articulation
invited by Ean Carr
- Double Negative, London** September 17, 2014
Tangible and Modular Input Device for Character Articulation
invited by Ean Carr
- Polytechnic Institute of New York University** August 1, 2014
Tangible and Modular Input Device for Character Articulation
invited by Andy Nealen
- George Mason University** July 19, 2013
Robust Inside-Outside Segmentation using Generalized Winding Numbers
invited by Yotam Gingold
- New York University** June 25, 2013
Robust Inside-Outside Segmentation using Generalized Winding Numbers
invited by Qingnan Zhou
- CVGC Seminar Series, Columbia University** June 18, 2013
Algorithms and Interfaces for Real-Time Deformation of 2D and 3D Shapes
invited by Eitan Grinspun
- Max-Planck-Institut für Informatik, Saarbrücken** February 26, 2013
Achieving High-quality Shape Deformation in Real Time
invited by Tino Weinkauf
- Workshop on Computer Graphics and Emerging Technology,
Shenzhen Institutes of Advanced Technology** November 26, 2012
Achieving High-quality Shape Deformation in Real Time

invited by Baoquan Chen

New York University

Fast Automatic Skinning Transformations

invited by Denis Zorin

July 31, 2012

NSF Workshop on Barycentric Coordinates

in Geometry Processing and Finite/Boundary Element Methods

High-quality Weight Functions via Constrained Optimization

invited by Kai Hormann

July 25, 2012

Freie Universität

High-quality Weight Functions via Constrained Optimization

invited by Konrad Polthier

June 22, 2012

SIGGRAPH Tokyo (teleconference)

Stretchable, Twistable Bones for Skeletal Shape Deformation

invited by Jun Saito

February 24, 2012

LiberoVision, Zurich

Real-time Shape Deformation:

Bounded Biharmonic Weights and Stretchable, Twistable Bones

invited by Remo Ziegler

February 2, 2012

DISI University of Genoa

Real-time Deformation: Bounded Biharmonic Weights and Stretchable, Twistable Bones

invited by Enrico Puppo

June 27, 2011

ETH Zurich-Disney Research Zurich Tech Talk

Mixed Finite Elements for Variational Surface Modeling

invited by Alexander Hornung

October 20, 2010

Panels

Huawei Research: Recent Advances in Visual Media Content Generation

invited by Richard Zhang, Changqing Zou

May 28, 2021

AIA Symposium On Artificial Intelligence In Architecture, Engineering, And Construction

invited by Benjamin Dillenburger, Matthias Kohler

October 20, 2020

Mitacs Panel Discussion Session

invited by Monica Caverson

November 13, 2019

Beijing Film Academy

invited by Baoquan Chen

July 28, 2019

Fields CQAM Launch

invited by Huaxiong Huang

June 28, 2018

Teaching

2022 Seminar in Geometry and Animation
University of Toronto

Instructor

2022 Geometry Processing

Instructor

	University of Toronto	
2022	Computer Graphics University of Toronto	Instructor
2020	Geometry Processing University of Toronto	Instructor
2020	Seminar in Geometry and Animation University of Toronto	Instructor
2019	Seminar in Geometry and Animation University of Toronto	Instructor
2016–2019	Computer Graphics University of Toronto <i>Designed novel curriculum</i>	Instructor
2017–2018	Geometry Processing University of Toronto <i>Designed novel curriculum</i>	Instructor
2015	Seminar in Geometry and Animation Columbia University <i>Designed novel curriculum</i>	Co-instructor
2013	Advanced Topics in Visual Computing ETH Zurich	Co-instructor
2011–2013	Computer Graphics ETH Zurich	Assistant
2008–2009	America Counts Math Intervention Clinton Public Middle School for Artists and Writers, New York	Student teacher

Postdoc Advising

Chenxi Liu Postdoc Fellow, University of Toronto	2023–present
Teemu Tyni Postdoc Fellow, University of Toronto <i>next stop: faculty position, University of Oulu</i>	2021–2023
Nicholas Sharp Postdoc Fellow, University of Toronto <i>next stop: NVIDIA</i>	2021–2022
Seungbae Bang Postdoc Fellow, University of Toronto <i>next stop: Amazon</i>	2019–2022
Etienne Corman Postdoc Fellow, University of Toronto <i>next stop: faculty position, CNRS</i>	2018–2019

PhD Advising

Yuta Noma PhD candidate, University of Toronto	2024–present
Lily Goli PhD candidate, University of Toronto	2022–present
Selena Ling PhD candidate, University of Toronto	2021–present
Towaki Takikawa PhD candidate, University of Toronto	2020–present
Yun-Chun Chen PhD, University of Toronto	2022–2025
Silvia Sellán PhD, University of Toronto	2019–2024
Hsueh-Ti Derek Liu PhD, University of Toronto	2017–2022
Risa Ulinski PhD candidate, University of Toronto	2019–2020
Sarah Kushner PhD candidate, University of Toronto	2017–2023
Changjian Li visiting PhD candidate, University of Hong Kong	2018–2019
Leonardo Koller Sacht visiting PhD student from IMPA, ETH Zurich <i>next stop: adjunct professor at Universidade Federal de Santa Catarina</i>	2012–2014

Doctoral Committee

Sarah Mokhtar Massachusetts Institute of Technology (Architecture) <i>Learning and computing the built environment: Expressive and Versatile Representations for Scalable and Actionable Performance</i>
Yue Li ETH Zurich <i>Efficient Computational Models for Forward and Inverse Elasticity Problems</i>
Jonas Zehnder Université de Montréal <i>Quasi Second-Order Methods for PDE-Constrained Forward and Inverse Problems</i>
Rahul Arora University of Toronto <i>Creative Visual Expression in Immersive 3D Environments</i>
Baptiste Angles University of Victoria <i>Geometric Modeling with Primitives</i>

Songrun Liu
 George Mason University
Opening Up New Possibilities Of Linear Blend Skinning

Akash Garg
 Columbia University
Interactive, Computation Assisted Design Tools

Masters Advising

Lulu Wei MSc, University of Toronto	2025–present
Aravind Ramakrishnan MSc, University of Toronto <i>next stop: PhD candidate UCSD Physics</i>	2021–2024
Lukas Jurisica MScAC, University of Toronto	2023
Josh Holinaty MSc, University of Toronto <i>next stop: Improbable Canada</i>	2019–2021
Thomas Davies MSc, University of Toronto <i>next stop: Autodesk</i>	2019–2021
Otman Benchekroun MSc, University of Toronto <i>next stop: PhD University of Toronto</i>	2020–2022
Junrui Xu MScAC, University of Toronto <i>next stop: RockMass</i>	2019
Aditya Sanghi MScAC, University of Toronto <i>next stop: Autodesk</i>	2018
Gavin Barill MSc, University of Toronto <i>next stop: PhD candidate McGill University, Mathematics</i>	2017–2019
Lawson Fulton MSc, University of Toronto <i>next stop: software engineer at MESH Inc.</i>	2017–2019
Timothy Jeruzalski MSc, University of Toronto <i>next stop: PhD candidate at University of Toronto</i>	2016–2018
Stefan Messmer MS, ETH Zurich <i>next stop: senior software engineer at MP Technology</i>	2013–2014
Christian Schulz	2012

MS, ETH Zurich <i>next stop: PhD candidate at ETH Zurich</i>	
David Meier MS, ETH Zurich <i>next stop: software engineer at LiberoVision</i>	2012
Oliver Glauser MS, ETH Zurich <i>next stop: PhD candidate at ETH Zurich</i>	2011–2012
Yang Song MA, New York University <i>next stop: PhD candidate at University of Utah</i>	2010–2011

Undergraduates and summer students

Jiayi Eris Zhang University of Toronto	2019–2021
Seyed Alireza Fatemi Jahromi Sharif University of Technology	2021–2021
Zoë Marschner Massachusetts Institute of Technology	2021–2021
Charles Bullingham University of Toronto	2021–2021
Junda Zhao University of Toronto	2021–2021
Jennifer Guo University of Toronto	2021–2021
Jacob Ridgeway University of Toronto	2021–2021
Aditya Chetan IIIT Delhi	2021–2021
Andrew Wang University of Toronto	2020–2021
Xiaochun Tong University of Toronto	2020–2021
Letícia Matos de Silva University of California Los Angeles, <i>visiting</i> Fields Undergraduate Summer Research Program	2020–2021
Jack Luong California State University, Fresno <i>visiting</i> Fields Undergraduate Summer Research Program	2020–2021
Yuchuan Yang University of California Los Angeles, <i>visiting</i> Fields Undergraduate Summer Research Program	2020–2021

Aravind Ramakrishnan University of Maryland, <i>visiting</i> Fields Undergraduate Summer Research Program	2020–2021
Cindy Zhu Unionville High School, <i>visiting</i>	2019–2020
Nanik Adnani Monarch Park Collegiate Institute <i>visiting</i>	2019
Silvia Sellán University of Oviedo, <i>visiting</i> Fields Undergraduate Summer Research Program	2018
Jacob Kesten Rice University, <i>visiting</i> Fields Undergraduate Summer Research Program	2018
Ang Yan Sheng National University of Singapore, <i>visiting</i> Fields Undergraduate Summer Research Program	2018
Arjun Chhabra University of Toronto	2018
Lizhe Chen University of Toronto	2018
Eduard Gonzalvo Gelabert Universitat Politècnica de Catalunya, <i>visiting</i> Centre de Formació Interdisciplinària Superior	2017–2018
Herng Yi Massachusetts Institute of Technology, <i>visiting</i> Fields Undergraduate Summer Research Program	2017
Silvia Sellán University of Oviedo, <i>visiting</i> Fields Undergraduate Summer Research Program	2017
Mitchell Dembowski Reyerson University, <i>visiting</i> Fields Undergraduate Summer Research Program	2017
Christine Ma University of Toronto Fields Undergraduate Summer Research Program	2017
Gavin Barill University of Toronto	2017
Darren Moore University of Toronto	2017
Lawson Fulton University of Toronto	2017
Klint Qinami Columbia University	2016

Lucas Schuermann Columbia University	2015
Vaibhav Vavilala Columbia University	2015
Dingzeyu Li visiting BA student from HKUST, ETH Zurich <i>next stop: PhD candidate at Columbia University</i>	2012–2013

Editorial Posts, Workshop Organizing, Program Chairing

Early Career Researcher Award Chair, *CHCCS Graphics Interface*, 2021–2022
Editor in Chief Search Committee Member, *ACM Transactions on Graphics*, 2021
General Chair, *Symposium on Geometry Processing*, 2021
Associate Editor, *ACM TOG*, 2020–2024
Associate Editor, *Computer Graphics Forum*, 2021–2024
Program Chair, *Pacific Graphics*, 2020
Program Chair, *Symposium on Geometry Processing*, 2020
Program Chair, *Graphics Interface*, 2020
Organizer, Fields Institute *libigl Hackathon* (postponed due to COVID-19 pandemic), 2020
Software & Dataset Awards Chair, *Symposium on Geometry Processing*, 2019–2020
Organizer, Fields Institute *Workshop on Robust Geometric Algorithms for Computational Fabrication*, 2019
Graduate School Chair, *Symposium on Geometry Processing*, 2018
Organizer, *Fields Institute Workshop on Robust Geometric Algorithms for Computational Fabrication*, 2018
Associate Editor, *Computers & Graphics*, 2017–2020 Posters Chair, *Pacific Graphics*, 2017

Conference Program Committees

ACM SIGGRAPH North America, 2017, 2018, 2020, 2026
ACM SIGGRAPH Asia, 2019, 2021, 2022, 2023
ACM SIGGRAPH North America Conflict of Interest Coordinator, 2019
ACM SIGGRAPH Asia Doctoral Consortium Committee, 2018
ACM SIGGRAPH Asia Courses, 2015
ACM SIGGRAPH Asia Technical Briefs & Posters, 2016, 2017, 2018
CAD/Graphics, 2015
CVPR Workshop on Learning 3D Generative Models, 2020
Eurographics, 2017, 2018
Eurographics Short Papers, 2012, 2013, 2014
Geometric Modeling and Processing, 2014, 2015, 2016, 2017
Graphics Interface, 2017
International Conference on 3D Vision (3DV), 2015, 2016, 2017
Pacific Graphics, 2014, 2015, 2016, 2017, 2019
Shape Modeling International, 2016, 2018, 2019
Shape Modeling International – Fabrication and Sculpting Event (FASE), 2019
Symposium on Computer Animation, 2015, 2016, 2017, 2018, 2020
Symposium on Computational Fabrication, 2017
Symposium on Geometry Processing, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2021
Symposium on Geometry Processing Reproducibility Stamp, 2016
Replicability Stamp, 2017, 2018, 2019, 2020, 2021

Awards Committees

ACM SIGGRAPH Technical Awards Committee, 2024–*present*
Pacific Graphics Awards, 2019
Symposium on Geometry Processing Software Award, 2017, 2018, 2019
Symposium on Geometry Processing Dataset Award, 2018

Conference Session Chairing

ACM SIGGRAPH North America, 2017, 2018, 2019, 2020
ACM SIGGRAPH Asia, 2018, 2019
ACM SIGGRAPH Asia Technical Briefs, 2017
Eurographics, 2017
Graphics Interface, 2017, 2018, 2019
Pacific Graphics, 2019
Symposium on Geometry Processing, 2015, 2016, 2017, 2019
TEDxUofTSalon, 2017
Tristate Workshop on Imaging and Graphics, 2015

Funding Referee Service

New Frontiers in Research Fund Exploration, Multidisciplinary Review Panel, 2021
Fields Undergraduate Research Summer Program, Committee 2019
United States-Israel Binational Science Foundation
Israeli Science Foundation
Mitacs Accelerate
NSERC Discovery
SNF Early PostDoc.Mobility Fellowship

Referee Service

ACM SIGGRAPH North America
ACM SIGGRAPH Asia
ACM SIGGRAPH Asia Courses
ACM SIGCHI
ACM Transactions and Graphics
ACM Transactions on Spatial Algorithms and Systems
CAD/Graphics
CVPR Conference on Computer Vision and Pattern Recognition
CVPR Learning 3D Generative Models Workshop
Computer Aided Geometric Design
Computer Graphics Forum
Computers and Graphics
ECCV European Conference on Computer Vision
Engineering with Computers
Eurographics
Eurographics Short Papers
Geometric Modeling and Processing
Graphical Models

Graphics Interface
IEEE Computer Graphics and Applications
IEEE Transactions on Visualization and Computer Graphics
IEEE Transactions on Pattern Analysis and Machine Intelligence
IEEE Robotics & Automation Letters
ICLR
ICML, *Expert Reviewer*
International Conference on 3D Vision (3DV)
International Journal of Computer Vision
International Journal for Numerical Methods in Engineering
Journal of Computer Graphics Techniques
Journal of Graphics Tools
Mathematical Geosciences
NeurIPS
Pacific Graphics
SIAM Journal of Imaging Sciences
SIBGRAPI Conference on Graphics, Patterns and Images
Shape Modeling International
Symposium on Computer Animation
Symposium on Computational Fabrication
Symposium on Geometry Processing
TEI ACM Conference on Tangible, Embedded and Embodied Interactions
UIST ACM Symposium on User Interface Software and Technology

Additional Service

Toronto Geometry Colloquium, *Advisor*
University of Toronto, Computer Graphics Club, *Faculty Coordinator*