

Hao (Richard) Zhang

PERSONAL INFORMATION

Position: Professor, School of Computing Science, Simon Fraser University, Canada
Citizenship: Canadian

CONTACT INFORMATION

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RESEARCH INTERESTS

Computer graphics, geometric modeling, shape analysis, 3D vision, geometric deep learning, computational design and fabrication.

EDUCATION

- Ph.D. in Computer Science, University of Toronto, 2003.
- Master of Mathematics, Department of Computer Science, University of Waterloo, 1997.
- Bachelor of Mathematics, Faculty of Mathematics, University of Waterloo, 1995.

EMPLOYMENT & APPOINTMENT

- 05/2022 - 04/2023: Amazon Scholar (full time).
- 11/2021 - 04/2022: Amazon Scholar (part time).
- 07/2020 - 07/2025: Distinguished SFU Professor
Simon Fraser University.
- 09/2014 - now: Professor
School of Computing Science, Simon Fraser University.
- 01/2017 - now: Visiting Professor
Visual Computing Research Center, Shenzhen University.
- 10/2016 - 02/2017: Visiting Professor
Department of Computer Science, Stanford University.
- 10/2018 - 09/2020: Visiting Professor
Advanced Innovation Center for Future Visual Entertainment (AICFVE), Beijing Film Academy.
- 09/2009 - 08/2014: Associate Professor
School of Computing Science, Simon Fraser University.
- 01/2003 - 08/2009: Assistant Professor
School of Computing Science, Simon Fraser University.

PERSONAL AWARDS AND RECOGNITION

- **The Canadian Human Computer Communications Society (CHCCS) Achievement Award in Computer Graphics**, 2022.
- **Distinguished SFU Professor** (equivalent to University Professor), 2020-2025.
- **Google Faculty Research Award** (16% success rate, 150 out of 917), 2019-2020.
- SFU Dean of Graduate Studies Award for Excellence in Leadership (service award), 2016.
- National Science Foundation of China Overseas, Hongkong, and Macau Scholar Collaborative Research Award (formerly Overseas Distinguished Young Scholar Award) - 国家自然科学基金委海外及港澳学者合作研究基金, 2015-2017.

- **NSERC Discovery Accelerator Supplement (DAS) Award** (125 awarded out of 3,150 grant applicants), 2014.
- Faculty of Applied Sciences (FAS) Research Excellence Award (early career), SFU, 2014.
- Award of Excellence (Technology), MITACS Internship, as academic supervisor, 2007.
- **Alumni Gold Medal for Outstanding Achievement in Graduate Studies** (1 awarded for graduates with master degree), University of Waterloo, 1997.
- **NSERC Postgraduate Scholarship**, 1998-1999.
- Ontario Graduate Scholarship for Science and Technology, 1997 and 2001.
- **René Descartes Fellowship**, University of Waterloo, 1991-1995.

PAPER AWARDS
AND RECOGNITION

- **CVPR 2020 Best Student Paper Award** (1 awarded out of 6,656 submissions), first-authored by my PhD student Zhiqin Chen.
- The inaugural **ChinaGraph Best Dataset Award** (1 awarded), “3D-FRONT: 3D Furnished Rooms with layOuts and semaNTics”, with Alibaba and Chinese Academy of Sciences, 2020.
- CAD/Graphics Best Paper Award (3 awarded), International Conference on CAD/Graphics, first-authored by my master student Warunika Ranaweera, 2017.
- **SGP Best Paper Award** (1 awarded), Eurographics/ACM Symposium on Geometry Processing (SGP), first-authored by my PhD student Ramsay Dyer, 2008.
- **SIGGRAPH paper recognitions:**
 1. Featured for *press release* (EurekAlert, Science Daily, etc.), “LOGAN: Unpaired Shape Transform in Latent Overcomplete Space” (6 selected out of 100+), SIGGRAPH Asia 2019.
 2. Featured for *press release* (EurekAlert, TechXplore, etc.), “GRASS: Generative Recursive Autoencoders for Shape Structures” (6 selected out of 100+), SIGGRAPH 2017.
 3. Featured on *back cover*: “TilinGNN: Learning to Tile with Self-Supervised Graph Neural Network”, SIGGRAPH 2020.
 4. Selected for *Technical Paper Video Trailer*:
 - “VDAC: Volume Decompose-and-Carve for Subtractive Manufacturing”, SIGGRAPH Asia 2020.
 - “Computational LEGO Technic Design”, SIGGRAPH Asia 2019.
 - “ L_1 -Medial Skeleton of Point Cloud”, SIGGRAPH 2013.
 - “Fit and Diverse: Set Evolution for Inspiring 3D Shape Galleries”, SIGGRAPH 2012.
 - “Automatic Reconstruction of Tree Skeletal Structures from Point Clouds”, SIGGRAPH Asia 2010.
- Most Cited Paper Award for the journal Computer-Aided Design, 2010. Note: papers for this distinction are determined solely based on the highest number of cites, excluding self-citations, received for all journal articles published in 2007-2009.

RESEARCH
FUNDING
TOTAL: \$2.4M

- Adobe Research Unrestricted Gift Grant (PI), multiple instalments 2017-2022, **US\$118,500**.
- Google Unrestricted Gift for Google PhD Fellowship (Zhiqin Chen), **\$90,757**, 2021-23.

- The Land Title and Survey Authority of British Columbia, “Image Enhancement and Recognition over Land Title Documents”, **\$20,000**, 2021-22.
- Huawei Canada Unrestricted Gift Fund, “Structured Neural Scene Modeling and Rendering”, **\$125,000**, 2021-23.
- **Google Faculty Research Award**, “Learning Interpretable Implicit Shape Models for Inverse Graphics”, **US\$28,000** including Google Cloud Platform Credits, 2019-20.
- Autodesk Research Unrestricted Gift Grant (PI), **US\$55,000**, 2020-21.
- Canada’s Digital Technology Supercluster funding with Boeing Canada, **\$62,500**, 2020.
- NSERC Discovery Grant and Discovery Accelerator Supplement (DAS), PI, total: **\$975,500**.
 1. “Learning Generative Models of 3D Shapes and Environments,” NSERC Discovery Grant 2019-2024, **\$64,000** per year; total: **\$320,000**.
 2. “A study of form, function, and fabrication of 3D shapes,” **NSERC Discovery Accelerator Supplement (DAS)** 2014-2017, **\$40,000** per year; total: **\$120,000**.
 3. “A study of form, function, and fabrication of 3D shapes,” NSERC Discovery Grant 2014-2019, **\$46,000** per year; total: **\$230,000**.
 4. “Towards High-Level Geometry Processing in Computer Graphics”, NSERC Discovery Grant 2010-2014, **\$31,000** per year; total: **\$124,000**.
 5. “Transform-Based Geometry Processing and Analysis in Computer Graphics”, NSERC Discovery Grant 2007-2012, **\$97,500** (funding between 2010 and 2012 superseded by early renewal).
 6. “Signal processing of 3-D mesh geometry: theory and applications”, NSERC Discovery Grant 2003-2007, **\$84,000**.
- National Science Foundation of China Overseas, Hongkong, and Macau Scholar Collaborative Research Award (formerly **Overseas Distinguished Young Scholar Award**), in partnership with Shenzhen University, January 1, 2016 - December 31, 2017, **RMB 200,000**.
- GRAND NCE (Network Center of Excellence on Graphics, Animation, and New Media), “DATUM: Data- and User-Driven Modeling”, 2014, **\$28,483**.
- NSERC Collaborative Research and Development (CRD) Grant, PI, “LIDAR Automatic Feature Detection and Object Classification”, January 2012 - December 2016, **\$156,000**.
- NSERC Engage Grant, Principal Investigator (PI), total: **\$75,000**.
 1. “Measuring and monitoring skin conditions using 3D imaging”, with industrial partner MetaOptima, April 2016 - October 2016, \$25,000.
 2. “3D Modeling for Visual and Experiential Learning”, with industrial partner iWonderLearning Inc., November 2012 - May 2013, \$25,000.
 3. “LIDAR Automatic Feature Detection and Object Classification”, with industrial partner ObjectRaku Tech., 2010, \$25,000.
- GRAND NCE grant, co-PI, “Platform performance”, 2010-2015, **\$100,000** (personal portion).
- MITACS Accelerate, Elevate, or Globallink grants, Principal Investigator (PI), total: **\$301,000**.
 1. Accelerate Postdoc Grant, “Layout Drawing Digitalization and Generation”, with Intelligent Project Solutions, 2019-2020, \$90,000.

2. Accelerate Internship Grant, “Learning PDF Document Structures using Recursive Neural Networks”, with industrial partner PDFTron Systems, 2018-2019, \$15,000.
 3. Globalink Research Award, “Learning Generative Models of Images and Patterns”, with IIT-Bombay, May - July 2018, \$6,000.
 4. Globalink Research Award, “Action-driven indoor scene modeling”, with Microsoft Research Asia and Tsinghua University, September 2015 - February 2016, \$5,000.
 5. Accelerate Internship Grant, Elevate Postdoctoral Fellowship, “Semantic document processing”, with industrial partner PDFTron Inc., December 2011 - December 2012, \$65,000.
 6. Accelerate Internship Grant, “Exploring document navigation and interaction on mobile devices”, with industrial partner PDFTron Systems, 2011-2012, \$15,000.
 7. Accelerate Internship Grant, “Efficient Modeling of Large-Scale LIDAR Data”, with industrial partner Softree Inc., 2010-2011, \$15,000.
 8. Accelerate Internship Grant, “Physically-based Oil Painting Program on iPhone”, with industrial partner Shaggy Frog Software, 2009-2010, \$15,000.
 9. Accelerate Internship Grant, “Covering Surfaces with Strips”, with Automated Systems Research, 2008-2009, \$15,000.
 10. Accelerate Internship Grant, “Algorithm for Sloped Roof Plane Generation”, with industrial partner Automated Systems Research, 2007-2008, \$15,000.
 11. Accelerate Internship Grant, “Convex Hull Decomposition for Collision Detection in Games”, with industrial partner Radical Entertainment, 2007-2008, \$30,000.
 12. Accelerate Internship Grant, “LCD Colour Correction of LED Back Light Arrays”, with industrial partner Brightside Technologies Inc. (now with Dolby), 2006-2007, \$15,000.
- MITACS Full Project Grant, co-PI (PI: K. Singh), “Mathematical Surface Representations for Conceptual Design,” 2003-2010, \$41,000 (personal portion).
 - NSERC Research Tools and Instrument (RTI) Grant, co-PI (T. Möller), “Lab Equipment for Graphics and Visualization Research”, Natural Sciences and Engineering Research Council of Canada (NSERC), 2008-2010, \$71,919.
 - SFU President’s Research Grant, PI, “The Mesh Connectivity Issue in Mesh Signal Processing”, 2003-2005, \$10,000.
 - IRIS Precarn Emerging Opportunities Fund, co-PI (T. Möller), “SMARS: Spectral Mesh Analysis and Recognition System”, 2003-2004, \$41,400.

PUBLICATIONS
(SIGGRAPH &
ACM TOG)

1. Yilin Liu, Liqiang Lin, Ke Xie, Chi-Wing Fu, **Hao Zhang**, and Hui Huang, “Learning Reconstructability for Drone Aerial Path Planning”, *ACM Trans. on Graphics (SIGGRAPH Asia)*, Vol. 41, No. 6, 2022.
2. Zhiqin Chen, Andrea Tagliasacchi, Thomas Funkhouser, and **Hao Zhang**, “Neural Dual Contouring”, *ACM Trans. on Graphics (SIGGRAPH)*, Vol. 41, No. 4, 2022.
3. Zhiqin Chen and **Hao Zhang**, “Neural Marching Cubes”, *ACM Trans. on Graphics (SIGGRAPH Asia)*, Vol. 40, No. 6, 2021.
4. Lin Gao, Tong Wu, Yu-Jie Yuan, Ming-Xian Lin, Yu-Kun Lai, and **Hao Zhang**, “TM-NET: Deep Generative Networks for Textured Meshes”, *ACM Trans. on Graphics (SIGGRAPH Asia)*, Vol. 40, No. 6, 2021.

5. Han Zhang, Yusong Yao, Ke Xie, Chi-Wing Fu, **Hao Zhang**, and Hui Huang, “Continuous Aerial Path Planning for 3D Urban Scene Reconstruction”, *ACM Trans. on Graphics (SIGGRAPH Asia)*, Vol. 40, No. 6, 2021.
6. Ali Mahdavi Amiri, Fenggen Yu, Haisen Zhao, Adriana Schulz, and **Hao Zhang**, “VDAC: Volume Decompose-and-Carve for Subtractive Manufacturing”, *ACM Trans. on Graphics (SIGGRAPH Asia)*, Vol. 39, No. 6, 2020.
7. Ruizhen Hu, Juzhan Xu, Bin Chen, Minglun Gong, **Hao Zhang**, and Hui Huang, “TAP-Net: Transport-and-Pack using Reinforcement Learning”, *ACM Trans. on Graphics (SIGGRAPH Asia)*, Vol. 39, No. 6, 2020.
8. Hao Xu, Ka Hei Hui, Chi Wing Fu, and **Hao Zhang**, “TilinGNN: Learning to Tile with Self-Supervised Graph Neural Network”, *ACM Trans. on Graphics (SIGGRAPH)*, Vol. 39, No. 4, 2020.
9. Ruizhen Hu, Zeyu Huang, Yuhan Tang, Oliver van Kaick, **Hao Zhang**, and Hui Huang, “Graph2Plan: Learning Floorplan Generation from Layout Graphs”, *ACM Trans. on Graphics (SIGGRAPH)*, Vol. 39, No. 4, 2020.
10. Kangxue Yin, Zhiqin Chen, Hui Huang, Daniel Cohen-Or, and **Hao Zhang**, “LOGAN: Unpaired Shape Transform in Latent Overcomplete Space”, *ACM Trans. on Graphics (SIGGRAPH Asia)*, Vol. 38, No. 6, Article 198, 2019. *One of six papers selected for Press Release.*
11. Hao Xu, Ka Hei Hui, Chi-Wing Fu, and **Hao Zhang**, “Computational LEGO Technic Design”, *ACM Trans. on Graphics (SIGGRAPH Asia)*, Vol. 38, No. 6, Article 196, 2019. *Selected for SIGGRAPH Asia Technical Paper Trailer.*
12. Lin Gao, Jie Yang, Tong Wu, Yu-Jie Yuan, Hongbo Fu, Yu-Kun Lai, and **Hao Zhang**, “SDM-NET: Deep Generative Network for Structured Deformable Mesh”, *ACM Trans. on Graphics (SIGGRAPH Asia)*, Vol. 38, No. 6, Article 243, 2019.
13. Zhihao Yan, Ruizhen Hu, Xingguang Yan, Luanmin Chen, Oliver van Kaick, **Hao Zhang**, and Hui Huang, “RPM-Net: Recurrent Prediction of Motion and Parts from Point Cloud”, *ACM Trans. on Graphics (SIGGRAPH Asia)*, Vol. 38, No. 6, Article 240, 2019.
14. Manyi Li, Akshay Gadi Patil, Kai Xu, Siddhartha Chaudhuri, Owais Khan, Ariel Shamir, Changhe Tu, Baoquan Chen, Daniel Cohen-Or, and **Hao Zhang**, “GRAINS: Generative Recursive Autoencoders for INdoor Scenes”, *ACM Trans. on Graphics*, Vol. 38, No. 2, Article 12, 2019; presented at SIGGRAPH 2019.
15. Wallace Lira, Chi-Wing Fu, and **Hao Zhang**, “Fabricable Eulerian Wires for 3D Shape Abstraction”, *ACM Trans. on Graphics (SIGGRAPH Asia)*, Vol. 37, No. 6, Article 240, 2018.
16. Chenyang Zhu, Kai Xu, Siddhartha Chaudhuri, Renjiao Yi, and **Hao Zhang**, “SCORES: Shape Composition with Recursive Substructure Priors”, *ACM Trans. on Graphics (SIGGRAPH Asia)*, Vol. 37, No. 6, Article 211, 2018.
17. Rui Ma, Akshay Gadi Patil, Matthew Fisher, Manyi Li, Soren Pirk, Sai-Kit Yeung, Binh-Son Hua, Xin Tong, Leonadis Guibas, and **Hao Zhang**, “Language-Driven Synthesis of 3D Scene from Scene Databases”, *ACM Trans. on Graphics (SIGGRAPH Asia)*, Vol. 37, No. 6, Article 212, 2018.
18. Shuhua Li, Ali Mahdavi-Amiri, Ruizhen Hu, Han Liu, Changqing Zou, Oliver van Kaick, Xiuping Liu, Hui Huang, and **Hao Zhang**, “Construction and Fabrication of Reversible Shape Transforms”, *ACM Trans. on Graphics (SIGGRAPH Asia)*, Vol. 37, No. 6, Article 190, 2018.
19. Xuelin Chen, Honghua Li, Chi-Wing Fu, **Hao Zhang**, Daniel Cohen-Or, and Baoquan Chen, “3D Fabrication with Universal Building Blocks and Pyramidal Shells”, *ACM Trans. on Graphics*

- (*SIGGRAPH Asia*), Vol. 37, No. 6, Article 189, 2018.
20. Kangxue Yin, Hui Huang, Daniel Cohen-Or, and **Hao Zhang**, “P2P-NET: Bidirectional Point Displacement Net for Shape Transform”, *ACM Trans. on Graphics (SIGGRAPH)*, Vol. 37, No. 4, Article 152, 2018.
 21. Ruizhen Hu, Zhihao Yan, Jingwen Zhang, Oliver van Kaick, Ariel Shamir, **Hao Zhang**, and Hui Huang, “Predictive and Generative Neural Networks for Object Functionality”, *ACM Trans. on Graphics (SIGGRAPH)*, Vol. 37, No. 4, Article 151, 2018.
 22. Haisen Zhao, **Hao Zhang**, Shiqing Xin, Yuanmin Deng, Changhe Tu, Wenping Wang, Daniel Cohen-Or, and Baoquan Chen, “DSCarver: Decompose-and-Spiral-Carve for Subtractive Manufacturing”, *ACM Trans. on Graphics (SIGGRAPH)*, Vol. 37, No. 4, Article 137, 2018.
 23. Fenggen Yu, Yan Zhang, Kai Xu, Ali Mahdavi-Amiri, and **Hao Zhang**, “Semi-Supervised Co-Analysis of 3D Shape Styles from Projected Lines”, *ACM Trans. on Graphics*, Vol. 37, No. 2, Article 21, 2018.
 24. Ruizhen Hu, Wenchao Li, Oliver van Kaick, Hui Huang, Ariel Shamir, and **Hao Zhang**, “Learning to Predict Part Mobility from a Single Static Snapshot”, *ACM Trans. on Graphics (SIGGRAPH Asia)*, Vol. 36, No. 6, Article 227, 2017.
 25. Zhaoliang Lun, Changqing Zou, Haibin Huang, Evangelos Kalogerakis, Ping Tan, Marie-Paule Cani, and **Hao Zhang**, “Learning to Group Discrete Graphical Patterns”, *ACM Trans. on Graphics (SIGGRAPH Asia)*, Vol. 36, No. 6, Article 225, 2017.
 26. Chenyang Zhu, Renjiao Yi, Kai Xu, Ibraheem Alhashim, and **Hao Zhang**, “Deformation-Driven Shape Correspondence via Shape Recognition,” *ACM Trans. on Graphics (SIGGRAPH)*, Vol. 36, No. 4, Article 51, 2017.
 27. Jun Li, Kai Xu, Siddhartha Chaudhuri, Ersin Yumer, **Hao Zhang**, and Leonadis Guibas, “GRASS: Generative Recursive Autoencoders for Shape Structures,” *ACM Trans. on Graphics (SIGGRAPH)*, Vol. 36, No. 4, Article 52, 2017. *One of six papers selected for Press Release.*
 28. Ruizhen Hu, Wenchao Li, Oliver van Kaick, Hui Huang, Melinos Averkiou, Daniel Cohen-Or, and **Hao Zhang**, “Co-Locating Style-Defining Elements on 3D Shapes,” *ACM Trans. on Graphics*, Vol. 36, No. 4, Article 50a, 2017.
 29. Rui Ma, Honghua Li, Changqing Zou, Zicheng Liao, Xin Tong, and **Hao Zhang**, “Action-Driven 3D Indoor Scene Evolution,” *ACM Trans. on Graphics (SIGGRAPH Asia)*, Vol. 35, No. 6, Article 173, 2016.
 30. Changqing Zou, Junjie Cao, Warunika Ranaweera, Ibraheem Alhashim, Ping Tan, Alla Sheffer, and **Hao Zhang**, “Legible Compact Calligrams”, *ACM Trans. on Graphics (SIGGRAPH)*, Vol. 35, No. 4, Article 122, 2016.
 31. Ruizhen Hu, Oliver van Kaick, Bojian Wu, Hui Huang, Ariel Shamir, and **Hao Zhang**, “Learning How Objects Function via Co-Analysis of Interactions”, *ACM Trans. on Graphics (SIGGRAPH)*, Vol. 35, No. 4, Article 47, 2016.
 32. Haisen Zhao, Fanglin Gu, Qi-Xing Huang, Jorge Garcia, Yong Chen, Changhe Tu, Bedrich Benes, **Hao Zhang**, Daniel Cohen-Or, and Baoquan Chen, “Connected Fermat Spirals for Layered Fabrication”, *ACM Trans. on Graphics (SIGGRAPH)*, Vol. 35, No. 4, Article 100, 2016.
 33. Ibraheem Alhashim, Kai Xu, Yixin Zhuang, Junjie Cao, Patricio Simari, and **Hao Zhang**, “Deformation-Driven Topology-Varying 3D Shape Correspondence”, *ACM Trans. on Graphics (SIGGRAPH Asia)*, Vol. 34, No. 6, Article 236, 2015.
 34. Xuelin Chen, **Hao Zhang**, Jinjie Lin, Ruizhen Hu, Lin Lu, Qi-Xing Huang, Bedrich Benes,

- Daniel Cohen-Or, and Baoquan Chen, “Dapper: Decompose-and-Pack for 3D Printing”, *ACM Trans. on Graphics (SIGGRAPH Asia)*, Vol. 34, No. 6, Article 213, 2015.
35. Yang Zhou, Kangxue Yin, Hui Huang, **Hao Zhang**, Minglun Gong, and Daniel Cohen-Or, “Generalized Cylinder Decomposition”, *ACM Trans. on Graphics (SIGGRAPH Asia)*, Vol. 34, No. 6, Article 171, 2015.
 36. Ruizhen Hu, Chenyang Zhu, Oliver van Kaick, Ligang Liu, Ariel Shamir, and **Hao Zhang**, “Interaction Context (ICON): Towards a Geometric Functionality Descriptor”, *ACM Trans. on Graphics (SIGGRAPH)*, Vol. 34, No. 4, Article 83, 2015.
 37. Honghua Li, Ruizhen Hu, Ibraheem Alhashim, and **Hao Zhang**, “Foldabilizing Furniture”, *ACM Trans. on Graphics (SIGGRAPH)*, Vol. 34, No. 4, Article 90, 2015.
 38. Ruizhen Hu, Honghua Li, **Hao Zhang**, and Daniel Cohen-Or, “Approximate Pyramidal Shape Decomposition”, *ACM Trans. on Graphics (SIGGRAPH Asia)*, Vol. 33, No. 6, Article 213, 2014.
 39. Kangxue Yin, Hui Huang, **Hao Zhang**, Minglun Gong, Daniel Cohen-Or, and Baoquan Chen, “Morfit: Interactive Surface Reconstruction from Incomplete Point Clouds with Curve-Driven Topology and Geometry Control”, *ACM Trans. on Graphics (SIGGRAPH Asia)*, Vol. 33, No. 6, Article 202, 2014.
 40. Ibraheem Alhasheem, Honghua Li, Kai Xu, Rui Ma, Junjie Cao, and **Hao Zhang**, “Topology-Varying 3D Shape Creation via Structural Blending”, *ACM Trans. on Graphics (SIGGRAPH)*, Vol. 33, No. 4, Article 158, 2014.
 41. Kai Xu, Rui Ma, **Hao Zhang**, Chenyang Zhu, Ariel Shamir, Daniel Cohen-Or, and Hui Huang, “Organizing Heterogeneous Scene Collection through Contextual Focal Points”, *ACM Trans. on Graphics (SIGGRAPH)*, Vol. 33, No. 4, Article 35, 2014.
 42. Yunhai Wang, Minglun Gong, Tianhua Wang, Daniel Cohen-Or, **Hao Zhang**, and Baoquan Chen, “Projective Analysis for 3D Shape Segmentation”, *ACM Trans. on Graphics (SIGGRAPH Asia)*, Vol. 32, No. 6, Article 192, 2013.
 43. **H. Zhang**, Kai Xu, Wei Jiang, Jinjie Lin, Daniel Cohen-Or, and Baoquan Chen, “Layered Analysis of Irregular Facades via Symmetry Maximization”, *ACM Trans. on Graphics (SIGGRAPH)*, Vol. 32, No. 4, Article 121, 2013.
 44. Oliver van Kaick, Kai Xu, **Hao Zhang**, Yunhai Wang, Shuyang Sun, Ariel Shamir, and Daniel Cohen-Or, “Co-Hierarchical Analysis of Shape Structures”, *ACM Trans. on Graphics (SIGGRAPH)*, Vol. 32, No. 4, Article 69, 2013.
 45. Shi-Sheng Huang, Ariel Shamir, Chao-Hui Shen, **Hao Zhang**, Alla Sheffer, Shi-Min Hu, and Daniel Cohen-Or, “Qualitative Organization of Collections of Shapes via Quartet Analysis”, *ACM Trans. on Graphics (SIGGRAPH)*, Vol. 32, No. 4, Article 71, 2013.
 46. Hui Huang, Shihao Wu, Daniel Cohen-Or, Minglun Gong, **Hao Zhang**, Guo Li, and Baoquan Chen, “ L_1 -Medial Skeleton of Point Cloud”, *ACM Trans. on Graphics (SIGGRAPH)*, Vol. 32, No. 4, Article 65, 2013.
 47. Hui Huang, Shihao Wu, Minglun Gong, Daniel Cohn-Or, Uri Asher, and **Hao Zhang**, “Edge-Aware Point Set Resampling,” *ACM Trans. on Graphics*, No. 32, No. 1, Article 9, 2013.
 48. Kai Xu, **Hao Zhang**, Wei Jiang, Ramsay Dyer, Zhiquan Cheng, Ligang Liu, and Baoquan Chen, “Multi-Scale Partial Intrinsic Symmetry Detection,” *ACM Trans. on Graphics (SIGGRAPH Asia)*, Vol. 31, No. 6, Article 181, 2012.
 49. Honghua Li, Ibraheem Alshaheem, **Hao Zhang**, Ariel Shamir, and Daniel Cohen-Or, “Stackabilization,” *ACM Trans. on Graphics (SIGGRAPH Asia)*, Vol. 31, No. 6, Article 158, 2012.

50. Yunhai Wang, Shmulik Asafi, Oliver van Kaick, **Hao Zhang**, Daniel Cohen-Or, and Baoquan Chen, “Active Co-Analysis of a Set of Shapes,” *ACM Trans. on Graphics (SIGGRAPH Asia)*, Vol. 31, No. 6, Article 165, 2012.
51. Hui Huang, Minglun Gong, Daniel Cohen-Or, Yaobin Ouyang, Fuwen Tan, and **Hao Zhang**, “Field-Guided Registration for Feature-Conforming Shape Composition,” *ACM Trans. on Graphics (SIGGRAPH Asia)*, Vol. 31, No. 6, Article 179, 2012.
52. Kai Xu, **Hao Zhang**, Daniel Cohen-Or, and Baoquan Chen, “Fit and Diverse: Set Evolution for Inspiring 3D Shape Galleries,” *ACM Trans. on Graphics (SIGGRAPH)*, Vol. 31, No. 4, pp. 57:1–57:10, 2012.
53. Oana Sidi, Oliver van Kaick, Yanir Kleinman, **Hao Zhang**, and Daniel Cohen-Or, “Unsupervised Co-Analysis of a Set of Shapes via Diffusion Maps,” *ACM Trans. on Graphics (SIGGRAPH Asia)*, Vol. 30, No. 6, Article 126, 2011.
54. Jinjie Lin, Daniel Cohen-Or, **Hao Zhang**, Cheng Liang, Andrei Sharf, Oliver Deussen, and Baoquan Chen, “Structure-Preserving Retargeting of Irregular 3D Architecture,” *ACM Trans. on Graphics (SIGGRAPH Asia)*, Vol. 30, No. 6, Article 183, 2011.
55. Kai Xu, Hanlin Zheng, **Hao Zhang**, Daniel Cohen-Or, Ligang Liu, and Yueshan Xiong, “Photo-Inspired Model-Driven 3D Object Modeling,” *ACM Trans. on Graphics (SIGGRAPH)*, Vol. 30, No. 4, pp. 80:1–80:10, 2011.
56. Kai Xu, Honghua Li, **Hao Zhang**, Daniel Cohen-Or, Yueshan Xiong, and Zhiquan Cheng, “Style-Content Separation by Anisotropic Part Scales”, *ACM Trans. on Graphics (SIGGRAPH Asia)*, Vol. 29, No. 6, pp. 184:1–184:10, 2010.
57. Shy Shalom, Ariel Shamir, **Hao Zhang**, and Daniel Cohen-Or, “Cone Carving for Surface Reconstruction”, *ACM Trans. on Graphics (SIGGRAPH Asia)*, Vol. 29, No. 6, pp. 150:1–150:8, 2010.
58. Yotam Livny, Feilong Yan, Matt Olson, Baoquan Chen, **Hao Zhang**, and Jihad El-Sana, “Automatic Reconstruction of Tree Skeletal Structures from Point Clouds”, *ACM Trans. on Graphics (SIGGRAPH Asia)*, Vol. 29, No. 6, pp. 151:1–151:8, 2010.
59. Liangliang Nan, Andrei Sharf, **Hao Zhang**, Daniel Cohen-Or, and Baoquan Chen, “SmartBoxes for Interactive Urban Reconstruction”, *ACM Trans. on Graphics (SIGGRAPH)*, Vol. 29, No. 4, pp. 93:1–93:10, 2010.
60. Kai Xu, **Hao Zhang**, Andrea Tagliasacchi, Ligang Liu, Guo Li, Ming Meng, and Yueshan Xiong, “Partial Intrinsic Reflectional Symmetry of 3D Shapes,” *ACM Trans. on Graphics (SIGGRAPH Asia)*, Vol. 28, No. 5, pp. 138:1–138:10, 2009.
61. Hui Huang, Dan Li, **Hao Zhang**, Uri Ascher, and Daniel Cohen-Or, “Consolidation of Unorganized Point Clouds for Surface Reconstruction”, *ACM Trans. on Graphics (SIGGRAPH Asia)*, Vol. 28, No. 5, pp. 176:1–176:7, 2009.
62. Kai Xu, Daniel Cohen-Or, Tao Ju, Ligang Liu, **Hao Zhang**, and Shizhe Zhou, “Feature-Aligned Shape Texturing”, *ACM Trans. on Graphics (SIGGRAPH Asia)*, Vol. 28, No. 5, pp. 108:1–108:6, 2009.
63. Andrea Tagliasacchi, **Hao Zhang**, and Daniel Cohen-Or, “Curve Skeleton Extraction from Incomplete Point Cloud,” *ACM Trans. on Graphics (SIGGRAPH)*, Vol. 28, No. 3, pp. 71:1–71:9, 2009.

1. Zeyu Huang, Juzhan Xu, Sisi Dai, Kai Xu, **Hao Zhang**, Hui Huang, and Ruizhen Hu, “NIFT: Neural Interaction Field and Template for Object Manipulation”, *International Conference on*

Robotics and Automation (ICRA), 2023.

2. Fenggen Yu, Zhiqin Chen, Manyi Li, Aditya Sanghi, Hooman Shayani, Ali Mahdavi-Amiri, and **Hao Zhang**, “CAPRI-Net: Learning Compact CAD Shapes with Adaptive Primitive Assembly”, *CVPR*, 2022.
3. Qimin Chen, Johannes Merz, Aditya Sanghi, Hooman Shayani, Ali Mahdavi-Amiri, and **Hao Zhang**, “UNIST: Unpaired Neural Implicit Shape-to-Shape Translation”, *CVPR*, 2022.
4. Chengjie Niu, Manyi Li, Kai Xu, and **Hao Zhang**, “RIM-Net: Recursive Implicit Fields for Unsupervised Learning of Hierarchical Shape Structures”, *CVPR*, 2022.
5. Huan Fu, Bowen Cai, Lin Gao, Lingxiao Zhang, Cao Li, Zengqi Xun, Chengyue Sun, Yiyun Fei, Yu Zheng, Ying Li, Yi Liu, Peng Liu, Lin Ma, Le Weng, Xiaohang Hu, Xin Ma, Qian Qian, Rongfei Jia, Binqiang Zhao, and **Hao Zhang**, “3D-FRONT: 3D Furnished Rooms with layOuts and semaNTics”, *ICCV*, 2021.
6. Zhiqin Chen, Vladimir Kim, Matthew Fisher, Noam Aigerman, **Hao Zhang**, and Siddhartha Chaudhuri, “DECOR-GAN: 3D Shape Detailization by Conditional Refinement”, *CVPR* (oral), 2021.
7. Manyi Li and **Hao Zhang**, “D²IM-Net: Learning Detail Disentangled Implicit Fields from Single Images”, *CVPR*, 2021.
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CONTRIBUTION
TO SOFTWARE

1. "Weighted Locally Optimal Projection" for point cloud processing, from SIGGRAPH Asia 2009 paper, adopted by **CGAL** - the open-source Computational Geometry Algorithms Library.
2. "Mean Curve Skeleton" for curve skeleton extraction, from SGP 2012 paper, adopted by **CGAL** - the open-source Computational Geometry Algorithms Library.
3. "Edge-Aware Re-Sampling" for point cloud processing, from ACM Trans. on Graphics (ToG) 2013 paper, adopted by **CGAL** - the open-source Computational Geometry Algorithms Library.

KEYNOTE TALKS

- "An Evolution of Learning Neural Implicit Representations for 3D Shapes", Computational Visual Media (CVM) Keynote Talk, Shenzhen, China, April 6-8, 2023.
- "Why is Computer Graphics Hard?", CHCCS Achievement Award Keynote Talk at Graphics Interface, Montreal, May 18, 2022.
- Graphics keynote talk at Graphics Interface 2022, declined due to giving the CHCCS Achievement Award talk at the same venue.
- "Unsupervised Learning of 3D Shape Structures", Keynote talk at ICCV 2021 Workshop on *Structural and Compositional Learning on 3D Data*, October 16, 2021, *online*.
- "Learning Generative Models of 3D Shapes: From Implicit Functions to Structured Representations": Keynote talk at ChinaGraph, Xiamen, China, October 23-25, 2020, *online*.
- "Can Machines Learn to Generate 3D Shapes?": Keynote talk at Symposium on Geometry Processing (SGP), Milan, Italy, July 8-10, 2019.
- "Computer Graphics in the Age of AI and Data-Driven Computing": Keynote talk at Taiwan Annual Computer Graphics Workshop (CGW), Tainan, Taiwan, June 29, 2018.
- "Can Machines Learn to Generate 3D Shapes?": Keynote talk at Computer Graphics International (CGI) 2018, Bintan Island, Indonesia, June 12, 2018.
- "From Symmetry to Functionality: An Evolution to Understand and Model 3D Shapes": Keynote talk at Shape Modeling International (SMI) 2018, Lisbon, Portugal, June 6, 2018.
- "Can Machines Learn to Generate 3D Shapes?": Keynote talk at CAD/Graphics 2017, Changsha, China, August 26, 2017.
- "New Geometry Problems in Computational Design and Fabrication": Keynote talk at Canadian Conference on Computational Geometry (CCCG) 2016, Vancouver, Canada, August 5, 2016.
- "Pyramidal Shapes: Decomposition and Packing for Efficient 3D Printing": Keynote talk at 3D Printing Workshop, University of Science and Technology, Hefei, China, July 31, 2015.
- "Towards High-Level Geometry Processing": Keynote talk at China-Israel Bi-National Confer-

ence, Tel Aviv, Israel, June, 2011.

DAGSTUHL, INVITED
INTERNATIONAL
WORKSHOP OR
SEMINAR

- “Unsupervised Learning of 3D Shape Structures”: Invited talk at *China Society of Image and Graphics (CSIG) International Seminar*, December 19, 2021, *online*.
- “From Pyramidality to Monotonicity: New Decomposition and Packing Problems for Fabrication and Planning”: *Toronto Geometry Symposium*, November 19, 2021, *online*.
- “Compactness, Symmetry, and Functionality: An Evolution to 3D Shape Understanding and Representation”: *3DGV Virtual Seminar Series*, July 21, 2021, *online*.
- “Learning Generative Models of 3D Shapes: From Implicit Functions to Structured Representations”: Invited talk at *UBC ICICS Centre for Artificial Intelligence Decision-making and Action (CAIDA)*, February 22, 2021, *online*.
- “Can Machines Learn to Design 3D Shapes?”: Invited talk at *Shape Matching in CAD Workshop*, at *Design, Computing, and Cognition*, Georgia Tech., December 13, 2020, *online*.
- “Finding the Right Representations for Generative Modeling of 3D Shapes”: Invited talk at *Huawei Strategy and Technology Workshop (STW)*, Shenzhen, May 15, 2019.
- “Computer Graphics in the Age of AI and Big Data”: *Symposium on Computer Graphics, AI, Big Data, and Visualization*, Instituto Superior Técnico, Departamento de Engenharia Informatica, Lisbon, Portugal, June 5, 2018.
- “Qualitative and Multi-Attribute Learning from Diverse Data Collections”: *Dagstuhl Seminar on “Functoriality in Geometry Data”*, Saarbrücken, Germany, January 9, 2017.
- “Shape Compaction for Design and Fabrication”: *Dagstuhl Seminar on “New Perspectives in Shape Analysis”*, Saarbrücken, Germany, February 10, 2014.
- “Delaunay Meshes: A Gentle Introduction”: Invited talk at *Workshop on Computational Mathematics of Discrete Surfaces*, organized by K. Polthier, H. Pottmann, and A. Sheffer, Banff, Canada, February 17, 2009.
- “Eigenstructures for Mesh Processing”: Invited talk at *Mini-symposium on Shape Understanding via Spectral Analysis Techniques*, organized by M. Spagnuolo at IEEE Conf. on Shape Modeling and Applications (SMI), Stony Brook, USA, June 5, 2008.
- “Spectral Processing for Surface Meshes”: Invited talk at *Mini-symposium on Effective Processing of Surface Meshes*, organized by K. Polthier and A. Sheffer at SIAM Conf. on Geometric Design and Computing, San Antonio, USA, November 6, 2007.
- “Spectral Processing for Surface Meshes”: Invited talk at *Workshop on Mathematical Foundations of Scientific Visualization, Computer Graphics, and Massive Data Exploration*, organized by B. Hamann, T. Möller, and B. Russell, Banff, Canada, April 15, 2004.

COURSES, PANELS,
TUTORIALS, AND
WORKSHOP
ORGANIZATION

- “Learning Generative Models of 3D Structures”, with Siddhartha Chaudhuri, Daniel Ritchie, Kai Xu, and Jiajun Wu:
 - 05/2020, Eurographics 2020 State-of-the-Art Report (STAR), Norrköping, Sweden.
 - 05/2019, Eurographics 2019 Tutorial, Genoa, Italy.
- “Learning 3D Generative Models”, CVPR 2020 Workshop, with Angel X. Chang, Siddhartha Chaudhuri, Qixing Huang, Daniel Ritchie, Manolis Savva, Kai Xu, among others, June 2020.
- “Deep Learning Foundations of Geometric Shape Modeling and Reconstruction”, CVPR 2020 Workshop, with Kui Jia, Yang Liu, Simon Lucey, Niloy Mitra, and Hao Su, June 2020.

- “CreativeAI: AI Meets Graphics, Opportunities and Challenges”, **invited panelist**, Eurographics 2019 Think Tank, Genoa, Italy, May 2019.
- “Modeling and Remodeling 3D Worlds”, with Craig Yu, Sai Kit Yeung, and Daniel Aliaga:
 - 11/2017, SIGGRAPH Asia Course, Bangkok, Thailand.
- “Structure-Aware Shape Processing”, with Niloy Mitra, Michael Wand, Daniel Cohen-Or, Vladimir Kim, and Qi-Xing Huang:
 - 08/2014, SIGGRAPH Course, Vancouver, Canada.
 - 11/2013, SIGGRAPH Asia Course, Hong Kong, China.
- “How to Write a SIGGRAPH Paper”, with Daniel Cohen-Or, Baining Guo, Dani Lischinski, Olga Sorkine, Li-Yi Wei, and Kun Zhou:
 - 11/2011, **Invited** SIGGRAPH Asia Course, Hong Kong, China.
- “Elements of Geometry Processing”, with Bruno Levy:
 - 11/2011, **Invited** SIGGRAPH Asia Course, Hong Kong, China.
- “Spectral Mesh Processing”:
 - 07/2010, SIGGRAPH Course (with Bruno Levy), Los Angeles, USA.
 - 12/2009, SIGGRAPH Asia Course (with Bruno Levy), Yokohama, Japan.
 - 05/2007, Eurographics State-of-the-Art report, Prague, Czech Republic.
- “A Survey on Shape Correspondence”:
 - 05/2010, Eurographics State-of-the-Art report, Norrkoping, Sweden.

OTHER INVITED
TALKS - SELECTED

- “Structures and Functions: An Evolution to 3D Shape Understanding and Representation”:
 - 2022/06/28, McGill University, *online*.
- “Analysis and Synthesis of 3D Indoor Scenes - From Structures to Actions and Language”:
 - 2022/02/07, Amazon Internal Talk, *online*.
- “From Pyramidality to Monotonicity: New Decomposition and Packing Problems for Fabrication and Planning”:
 - 2022/10/21, Visual Computing and Robotics Seminar, Simon Fraser University.
 - 2021/11/23, Visual Computing Center, Shenzhen University, *online*.
- “3D Content Generation: from Inspired Modeling to Creative Modeling”:
 - 2021/10/07, Peking University, *online*.
 - 2021/06/29, ByteDance TikTok Lecture Series, *online*.
 - 2021/06/28, Visual Computing Center, Shenzhen University, *online*.
- “From Symmetry to Functionality: An Evolution to Understand 3D Shapes and Environments”:
 - 2020/09/09, Google 3D Learning Seminars, *online*.
 - 2020/04/09, Huawei Japan Research Center, *online*.
 - 2018/06/15, Tianjin University.
 - 2018/05/26, SFU-ZJU Joint Symposium, Zhejiang University.
 - 2018/05/24, Nanjing University.
 - 2017/08/29, National Chiao Tung University.
 - 2017/07/18, *Visual Computing Summer School*, Shenzhen University.

- 2017/07/02, *Visual Computing Summer School*, Shandong University.
- 2017/04/07, Chinese University of Hong Kong.
- 2017/01/31, Autodesk Research, San Francisco.
- 2017/01/27, Adobe Research, San Jose.
- “Finding the Right Representations for Generative Modeling of 3D Shapes”:
 - 2019/04/24, Peking University.
 - 2019/04/22, Shenzhen University.
- “Can Machines Learn to Generate 3D Shapes?”:
 - 2018/12/03, Tsinghua University.
- “Computer Graphics in the Age of AI and Big Data”:
 - 2018/07/19, *Visual Computing Summer School*, Shandong University.
 - 2018/07/16, *Visual Computing Summer School*, Shenzhen University.
 - 2018/05/23, Nanjing Post University, China.
 - 2018/04/13, Shenzhen University, China.
- “Pyramids, Tetris, Lego, and Spirals: New Geometry Problems for 3D Printing”:
 - 2018/06/28, National Tsing Hua University, Taiwan.
 - 2017/04/07, Shenzhen University.
 - 2017/01/26, University of California at Davis.
 - 2016/09/30, Adobe Research, Seattle.
 - 2016/04/22, University of Hong Kong.
 - 2016/04/18, Zhejiang University.
- “Function, Form, and Fabrication”:
 - 2017/01/30, second talk on “Recent Progress”, Stanford University.
 - 2016/10/05, first talk on “Transforms in Understanding Forms, Functions, and Fabrication”, Stanford University.
- “Data-Driven Geometric Modeling: Stories from Two Sides”:
 - 2016/08/26, Shenzhen University.
 - 2016/08/11, *Splunk Brown Bag Machine Learning Seminar*, Vancouver.
- “Why is Computer Graphics Hard?”:
 - 2016/04/21, Shenzhen University.
 - 2016/04/18, Zhejiang University.
 - 2015/11/19, *School of Computing Science Colloquium Series*, SFU.
 - 2015/07/22, *International Summer School on Visual Computing*, Shandong University.
 - 2015/07/20, Microsoft Research Asia.
 - 2015/07/20, Peking University.
 - 2014/12/12, University of Victoria.
 - 2014/10/24, Nanjing University.
 - 2014/10/22, Northwest Polytech University, China.
 - 2014/07/20, University of British Columbia.

- “Shape Compaction for Design and Fabrication”:
 - 2015/07/30, *International Summer School*, University of Science and Technology, China.
 - 2015/06/24, Autodesk Research, Toronto.
 - 2015/06/23, University of Waterloo.
 - 2014/10/24, Nanjing University.
 - 2014/10/21, Northwest Polytech University, China.
 - 2014/04/21, Shandong University.
- “High-Level Geometry Processing: Now and New Challenges”:
 - 2013/04/09, Tsinghua University.
 - 2012/07/02, “Symmetry, Semantics, and Co-Analysis: Towards High-Level Geometry Processing”, Microsoft Research Asia.
 - 2011/04/20, “Model-Driven 3D Content Creation as Variation”, Hong Kong University of Science and Technology.
 - 2011/04/16, “Model-Driven 3D Content Creation as Variation”, *Meeting of the China Computer Federation Young Computer Scientists and Engineers Forum (CCF YOCSEF)*.
- “A Survey on Shape Correspondence”:
 - 2012/07/04, *International Summer School*, University of Science and Technology, China.
 - 2008/12/08, “3D Shape Correspondence under Bending and Stretching”, *City Workshop on City Modeling, Simulation, and Visualization*, Shenzhen Institute of Advanced Technologies.
- “Spectral Processing for Surface Meshes”:
 - 2011/04/04, Dalian University of Technology, China.
 - 2004/04/25, Beijing University of Aeronautics and Astronautics.
- “Delaunay Meshes: A Gentle Introduction”:
 - 2008/06/08, University of Toronto.
 - 2007/02/09, “Delaunay Meshes and Non-obtuse Meshes”, University of Victoria, Canada.
- “Transform-Domain Geometry Processing”:
 - 2008/12/10, “Geometry processing in alternative domains”, Zhejiang University.
 - 2008/08/01, University of Calgary, Canada.

PROFESSIONAL
SERVICES

Editorial boards, conference chairing, and organization

- Associate editor-in-chief, IEEE Computer Graphics & Applications (CG&A), 2019-2022.
- Editor-in-chief: Computer Graphics Forum, 2014-2018.
- Associate editors:
 1. ACM Trans. on Graphics (ToG), 2020-now.
 2. IEEE Trans. on Visualization and Computer Graphics (TVCG), 2018-2022.
 3. Graphical Models, 2010-2018.
 4. Computer & Graphics, 2015-2018.
 5. The Visual Computer, 2015-2018.
 6. Computer Graphics Forum, 2012-2014.

- Conference chair/co-chair:
 1. International Geometry Summit, 2019.
 2. SIAM Conference on Geometric Design and Computing, 2019.
- Program chair/co-chair:
 1. Computer Graphics International (CGI) 2018.
 2. Graphics Interface (GI) 2015.
 3. SIGGRAPH Asia Course 2014.
 4. ACM/Eurographics Symposium on Geometry Processing (SGP) 2013.
- Lead co-guest editor, IEEE Computer Graphics & Applications Special Issue on “Computational Design and Fabrication Meet Computer Graphics”, 2017.

Program/award committees, area chair (partial list)

- SIGGRAPH Asia 2019 Technical Paper Sorting Committee.
- ICCV 2023 Area Chair.
- SIGGRAPH 2012-13, 2016-17, 2021-22, and the Inaugural Best Paper Award Committee (2022).
- SIGGRAPH Asia 2012-13, 2016 (course committee), 2017-18, 2019 (course committee), 2020.
- International Joint Conference on AI (IJCAI), senior program committee, 2021.
- Eurographics 2009-10, 2012 (awards committee), 2014, 2016, 2018-19, 2021.
- Symposium on Geometry Processing (SGP) 2009-2021.
- IEEE Shape Modeling and Applications (SMI) 2008, 2010-2012, 2016.
- Graphics Interface 2010-2015.
- Pacific Graphics (PG) 2007, 2009-2012, 2019-20.

Grant/scholarship committee or reviewer

- External referee (selected): National Science Foundation (NSF); Canada Research Chair Program; NSERC Discovery Grant; NSERC CRD Grant; Competitive Research Grants (CRG) program at KAUST; Swiss National Science Foundation (SNSF) grant; Israeli Science Foundation (ISF) grant; Austrian Science Fund (FWF); NSF China.

Departmental and university administration

- Ebcó Eppich Chair Advisory Committee, 2021-2025.
- Associate Director of Research and Industrial Relations, 2018-2021.
- Director of Professional Masters Program in Visual Computing, 2018 - 2019.
- Tenure and Promotion Committee, 2017-2018.
- Faculty Search Committee, 2017-2021.
- Graduate Program Chair, School of Computing Science, SFU, 2012-2016.
- Graduate Admissions Chair, School of Computing Science, SFU, 2005-2010.

Other services

- ACM Distinguished Speaker, 2016-2019.

Awards won by current and past students under my supervision

1. 2021-22, **Goggle PhD Fellowship**, by Zhiqin Chen.
2. 2021, **NVIDIA PhD Fellowship Finalist** (among top 10 applicants), by Zhiqin Chen.
3. 2020, Best Student Paper Award at CVPR 2020 Workshop on Text and Documents in the Deep Learning Era, by Akshay Gadi Patil.
4. 2020, **Best Student Paper Award at CVPR 2020**, by Zhiqin Chen.
5. 2020-21, British Columbia Graduate Scholarship, by Shimon Smith.
6. 2019, **Asia Graphics Young Researcher Award**, by Ruizhen Hu.
7. 2019, Graduate Dean's Entrance Scholarship (GDES) at SFU, by Fenggen Yu (PhD); three awards per year in School of Computer Science.
8. 2019, Dean of Applied Science Convocation Medal and Computing Science Graduation Award, by Chen Song, NSERC USRA in 2018.
9. 2018, **Adobe PhD Fellowship Finalist**, by Kangxue Yin.
10. 2018, **China Scholarship for Outstanding Self Finance Students Abroad**, by Kangxue Yin (PhD); there are about 40 such awards won in Canada.
11. 2018, Graduate Dean's Entrance Scholarship (GDES) at SFU, by Johannes Merz (PhD); three awards per year in School of Computer Science.
12. 2017, Best Paper Award at the International Conference on CAD/Graphics, by Warunika Ranawara (MSc).
13. 2016, **Excellent Young Researcher Award (优青) of China**, by Kai Xu (visiting PhD); there are 400 such awards each year over all disciplines.
14. 2015, **Alain Fournier Award for the best Ph.D. dissertation in computer graphics in Canada**, by Ibraheem Alhashim (PhD).
15. 2015, CD Nelson Entrance Scholarship at SFU, by Wallace Pinto Lira (PhD); three awards per year in School of Computer Science.
16. 2013, **Azrieli Postdoc Fellowship**, by Oliver van Kaick (PhD).
17. 2011, Best Ph.D. Thesis Award at National University of Defense Technology, China, by Kai Xu (visiting PhD).
18. 2011-2013, **Alexander Bell Canada Graduate Scholarship from NSERC**, by Andrea Tagliasacchi (PhD).
19. 2009, Best Student Paper Award for MITACS-Related Research, by Andrea Tagliasacchi (PhD).
20. 2008, Best Student Paper Award for MITACS-Related Research, by Ramsay Dyer (PhD).
21. 2008, **Best Paper Award at Symposium on Geometry Processing (SGP)**, by Ramsay Dyer (PhD).
22. 2007, Award of Excellence from MITACS Internship Program, by Xiaoxing Li (MSc).

Current senior supervision of postdoc, graduate students, and visiting students

1. Postdoc, Yizhi Wang, 01/2023 - now.
2. Postdoc, Hang Zhou, 12/2020 - now.
3. Ph.D., Dingdong Yang, 01/2023 - now.
4. Ph.D., Yilin Liu, 09/2022 - now.
5. Ph.D., Qimin Chen, 01/2021 - now.
6. Ph.D., Aditya Vora, 01/2021 - now.
7. Ph.D., Maham Tanveer, 05/2021 - now.
8. Ph.D., Fenggen Yu, 09/2019 - now.
9. Ph.D., Zhiqin Chen, 09/2019 - now.
10. Ph.D., Akshay Gadi Patil, 09/2016 - now.
11. Ph.D., Wallace Pinto Lira, 09/2015 - now.
12. M. Sc., Perry Deng, 09/2021 - now.
13. M. Sc., Perla Sai Raj Kishore, 09/2021 - now.
14. M. Sc., Ruiqi Wang, 09/2021 - now.

Ph.D. students supervised

1. Kangxue Yin, *Learning shape-to-shape transformation*, 09/2015 - 05/2020; **thesis and defence “passed as is”**. Now research scientist, NVidia Toronto AI Lab.
2. Chenyang Zhu, *Learning to Correspond and Compose Shape Structures*, 09/2014 - 02/2019. Now assistant professor at National University of Defence Technology, China.
3. Rui Ma, *Sub-Scene Level Analysis and Synthesis of 3D Indoor Scenes*, 09/2012 - 09/2017; **thesis and defence “passed as is”**. Now associate professor at Jilin University, China. Previously, computer vision research scientist at Huawei Vancouver, BC, Canada.
4. Ibraheem Alhashim, *Topology-Varying Shape Matching and Modeling*, 05/2011 - 11/2015; **thesis and defence “passed as is”**. Winner of the **Alain Fournier Award** for the best Ph.D. dissertation in computer graphics in 2015. Last known position: postdoc at Visual Computing Center, King Abdullah University of Science and Technology, Saudi Arabia.
5. Honghua Li, *Shape Compaction via Stacking and Folding*, 09/2010 - 04/2015. Now senior Algorithm Engineer at AILabs of Alibaba, Hangzhou, China.
6. Andrea Tagliasacchi, *Skeleton Extraction and Skeleton-Driven Processing of Incomplete Data*, 09/2008 - 04/2013; **thesis and defence “passed as is”**. Now staff research scientist at Google Brain, Toronto. Formerly, assistant professor at University of Victoria, Victoria, BC, Canada.
7. Oliver van Kaick, *Matching Dissimilar Shapes*, 09/2005 - 11/2011; **thesis and defence “passed as is”**. Now associate professor at Carleton University, Ottawa, ON, Canada.
8. Matt Olson, *A Plane View of Geometric Silhouettes*, 09/2005 - 04/2011. Last known position: software engineer at Safe Software, Vancouver, BC, Canada.
9. Ramsay Dyer, *Self-Delaunay Meshes for Surfaces*, 09/2003 - 01/2010. Now editor at Mathematical Sciences Publishers (MSP). Last known position: postdocs at INRIA and Groningen

University.

10. Frank (Rong) Liu, *Spectral Mesh Segmentation*, 09/2003 - 05/2009. Now senior software engineer at Microsoft, Seattle, USA.

Postdocs, visiting PhDs, and undergrad students supervised

1. Postdoc, Manyi Li, 05/2019 - July 2021.
2. Visiting Ph.D., Jiongchao Jin, from Beihang University, 10/2018 - 10/2020.
3. Visiting Ph.D., Xiaogang Wang, from Beihang University, 05/2019 - 04/2020.
4. Visiting undergraduate student, Azmarie Yuxin Wang, from SFU, 05/2019 - 08/2019.
5. SFU VPA Undergraduate Research Assistant, Leo Haipeng Li, from SFU, 05/2019 - 08/2019.
6. Postdoc, Ali Mahdavi-Amiri, 01/2017 - 12/2018, on NSERC Postdoctoral Fellowship. Now University Research Associate at SFU.
7. NSERC Undergraduate Research Assistant (USRA), Chen Song, 05/2018 - 08/2018. Now PhD at UT Austin.
8. Manyi Li, visiting Ph.D., Shandong University, China, 09/2017 - 09/2018. Now postdoc at SFU.
9. Zili Yi, visiting Ph.D., Memorial University of Newfoundland, Canada, 09/2016 - 06/2018. Now Research Engineer at Huawei Canada.
10. Changqing Zou, postdoc, 06/2015 - 09/2017. Now Research Scientist at Huawei Canada. Formerly, Assistant Research Professor at the University of Maryland Institute for Advanced Computer Studies (UMIACS).
11. Han Liu, postdoc, 07/2016 - 07/2017. Now research scientist at Electronic Arts, California, USA.
12. Ruizhen Hu, visiting Ph.D. from Zhejiang University, China, 09/2012 - 10/2014. Now associate professor at Shenzhen University, China.
13. Hui Wang, visiting Ph.D. from Dalian University of Technology, China, 09/2011 - 09/2012. Last known as assistant professor at Hebei Normal University, China.
14. Yanzhen Wang, visiting Ph.D. from National University of Defense Technology (NUDT), China, 07/2009 - 08/2010 and 05/2011 - 10/2011. Last known as assistant professor at NUDT.
15. Kai Xu, visiting Ph.D. from National University of Defense Technology (NUDT), China, 10/2008 - 10/2010. Now professor at NUDT.
16. Shy Shalom, visiting Ph.D. from Bar-Ilan University, Israel, 09/2008 - 01/2009.

Masters students supervised

1. Zhiqin Chen, *IM-NET: Learning Implicit Fields for Generative Shape Modeling*, 09/2017 - 06/2019. Now PhD at SFU.
2. Jon Liu, *A Qualitative and Localized Evaluation for 3D Indoor Scene Synthesis*, 01/2018 - 04/2019. Now PhD at SFU.
3. Jaime Vargas, *Towards Learning of a Joint Geometry-Structure Manifold for Shape Exploration*, 09/2014 - 12/2016.
4. Warunika Ranaweera, *ExquiMo: An Exquisite Corpse Tool for Co-Creative 3D Shape Modeling*,

- 09/2014 - 12/2016. Now software engineer at Klipfolio Inc. Formerly, software engineer at IBM.
5. Zeinab Sadeghipour Kermani, *Learning 3D Scene Synthesis from Annotated RGB-D Images*, 09/2014 - 06/2016. Last known as 3D imaging engineer at MetaOptima Inc.
 6. Shuyang Sun, *Structural Co-Consolidation of Shape Collections*, 09/2012 - 06/2015. Last known as software developer at SAP Canada.
 7. Sushant Joshi, *A Non-Local Approach to Tree Peak Detection in LIDAR Data*, 09/2012 - 11/2014. Last known as software engineer at Conavi Medical Inc.
 8. Anna Mehrt, *Active Learning for Semantic Labelling of Airborne LiDAR Data*, 09/2010 - 09/2013; **thesis and defence “passed as is”**. Last known as software engineer at MDA.
 9. Yuan Liu, *Explicit Memory Management for Mesh Traversal*, 09/2009 - 04/2013. Last known as software developer at SAP Canada.
 10. Xiaoming Li, *A Comparative Study of Spectral Embedding Methods for Triangle Meshes*, 09/2010 - 04/2013.
 11. Nima Aghdaii, *5-6-7 Meshes*, 09/2009 - 06/2012. Now software engineer at SnapChat (previously at Facebook).
 12. Ibraheem Alhashim, *Detail-Replicating Shape Stretching*, 01/2009 - 02/2011. Now postdoc at KAUST.
 13. Joe Kahlart, *Tiling surfaces using straight strips*, 09/2007 - 05/2009. Last known as software engineer at ObjectRaku.
 14. Jeff (Jun) Yu, *A Prototype Sketch-Based Architecture Modelling System with Traditional Design Habits*, 09/2006 - 06/2008. Last known as software engineer at Electronic Arts.
 15. John Y. S. Li, *Nonobtuse Meshes with Guaranteed Angle Bounds*, 09/2004 - 12/2006. Last known as software engineer at Slant Six Games.
 16. Xiaoxing Li, *Towards Expression-Invariant Face Recognition using Multiple Adaptive Attributes*, 09/2004 - 11/2006. Now image algorithm engineer at Apple Inc.
 17. Andrew Clements, *Minimum Ratio Contours for Meshes*, 09/2003 - 05/2006. Last known as software engineer at Action Pants.
 18. Varun Jain, *Robust Correspondence and retrieval of articulated shapes*, 01/2004 - 05/2006. Now senior software engineer at Google Inc.