

MINGLUN GONG

PROFESSOR AND DIRECTOR

School of Computer Science
University of Guelph
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EDUCATION

Ph.D.	Computer Science, University of Alberta, Canada	2003.11
	Dissertation: <i>Rayset and its applications to static and dynamic image synthesis</i>	
M.Sc.	Computer Science, Tsinghua University, China	1997.07
	Thesis: <i>Rendering and real time walkthrough techniques for architectural modeling</i>	
B.Eng.	Engineering & Computer Science, Harbin Engineering University, China	1994.07

EMPLOYMENT HISTORY

- **Professor**

School of Computer Science	University of Guelph	2019.05 - Present
Department of Computer Science	Memorial University of Newfoundland	2015.09 - 2019.04
- **Associate Professor**

Department of Computer Science	Memorial University of Newfoundland	2007.08 - 2015.08
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- **Assistant Professor**

Department of Computer Science	Memorial University of Newfoundland	2007.08 - 2010.08
Department of Math and Comp. Sci.	Laurentian University	2003.08 - 2007.07
- **Visiting Professor**

Visual Computing Center	Shenzhen Inst. of Advanced Tech.	2012.11 - 2013.06
Visual Computing Center	Shenzhen Inst. of Advanced Tech.	2010.11 - 2011.02
- **Adjunct Professor**

Department of Computer Science	Memorial University of Newfoundland	2019.05 - 2025.04
Department of Computing Science	University of Alberta	2006.09 - 2018.12
- **Sessional Lecturer**

Department of Computer Science	University of Saskatchewan	1999.06 - 2000.08
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- **Software Engineer**

Institute of Building Software	China Academy of Building Research	1997.07 - 1997.12
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MAJOR AWARDS AND DISTINCTIONS

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|---|--|---------|
| Test-of-Time Award | ACM SIGGRAPH | 2025.06 |
| <ul style="list-style-type: none"> • Recognized for the paper "<i>L1-Medial Skeleton of Point Cloud.</i>" This prestigious award honors work that has had a lasting and significant impact on the field of computer graphics. The 2025 award committee selected from papers published between 2013 and 2015 at SIGGRAPH, the premier conference in the field of computer graphics. | | |
| Best Paper Award | Canadian Image Processing and Pattern Recognition Society | 2019.05 |
| <ul style="list-style-type: none"> • Awarded for the paper "<i>Hierarchically-Fused Generative Adversarial Network for Text-to-Realistic Image Synthesis</i>" at the 16th Conference on Computer and Robot Vision. | | |
| Best Paper Award | ISVC Steering Committee | 2016.12 |
| <ul style="list-style-type: none"> • Awarded for the paper "<i>An Efficient Algorithm for Feature-Based 3D Point Cloud Correspondence Search</i>" at the 12th International Symposium on Visual Computing. | | |
| Best Paper Award | Canadian Artificial Intelligence Association | 2015.06 |
| <ul style="list-style-type: none"> • Awarded for the paper "<i>Budget-Driven Big Data Classification</i>" at the 28th Canadian Conference on Artificial Intelligence. | | |
| Izaak Walton Killam Memorial Scholarship | University of Alberta | 2002.05 |
| <ul style="list-style-type: none"> • The University of Alberta's most prestigious graduate scholarship, awarded annually to approximately 20 top doctoral students across all disciplines. | | |
| 2nd Prize of the Science & Technology Progress | State Education Commission of China | 1996.06 |
| <ul style="list-style-type: none"> • Issued by for the project developed by our research group in Tsinghua University. | | |
| Outstanding Graduate | Harbin Engineering University | 1994.07 |
| <ul style="list-style-type: none"> • About 10 students are honored each year upon their graduations, chosen from over a thousand graduates. | | |
| Meritorious Team Award | Consortium for Mathematics and Its Applications of US | 1994.03 |
| <ul style="list-style-type: none"> • Awarded to our 3-person team for our solution in Mathematical Contest in Modeling. | | |

ADMINISTRATIVE SERVICES

- **School Director**

School of Computer Science	University of Guelph	2019.05 - Present
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- **Department Head**

Department of Computer Science	Memorial University	2016.09 - 2019.04
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- **Deputy Head (Graduate Studies)**

Department of Computer Science	Memorial University	2013.09 - 2015.08
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- **External Reviewer**

Proposal for BSc in Economics and Data Science	Algoma University	2025.09 - 2025.11
Institutional Quality Assurance Process Review	Nipissing University	2022.03 - 2022.08
Centre for Future Mobility Research and Innovation	York University	2021.11 - 2022.04

- **Senate and Council Memberships**

University Senate	University of Guelph	2019.09 - Present
Council of Academic Chairs	University of Guelph	2019.09 - Present

- **Committee Memberships**

J.D. MacLachlan Renovation Project	University of Guelph	2023.09 - 2025.01
Engineering/CS Expansion Steering Committee	University of Guelph	2022.09 - 2025.01
AVP/Chief Information Officer Search Committee	University of Guelph	2023.02 - 2023.07
Physics Department Chair Search Committee	University of Guelph	2020.12 - 2022.08
Associate Dean of Science Review Committee	Memorial University	2015.06 - 2015.08

PROFESSIONAL SERVICES

Editorial Board Member for Journals

- Signal Processing Letters, IEEE 2020.09 – pres.
- Pattern Recognition, Elsevier, 2014.06 - pres.
- ISRN Artificial Intelligence, Hindawi, 2011.06 - 2013.02

Chair, Area Chair, and Section Chair for Conferences

- Int. Joint Conf. on Artificial Intelligence (Area Chair) 2025
- Int. Symp. on Visual Computing (Section Chair) 2025
- Int. Joint Conf. on Robotics and Artificial Intelligence (Co-Chair) 2024
- ISVC Special Track: Generalization in Visual Machine Learning (Co-Chair) 2024
- Artificial Intelligence (Section Chair) 2015
- Graphics Interface (Section Chair) 2010, 2011
- Computer and Robot Vision (Section Chair) 2006

Program Committee Member for Conferences

- ACM SIGGRAPH 2025
- ACM SIGGRAPH Asia 2024
- IEEE Int. Conf. on Computer Vision, 2007, 2011, 2013, 2023
- IEEE Conf. on Computer Vision and Pattern Recognition, 2008, 2011-2013
- European Conf. on Computer Vision 2018
- AAAI Conf. on Artificial Intelligence 2019, 2022, 2023
- Int. Joint Conf. on Artificial Intelligence 2021-2024

- Graphics Interface, 2010-2012, 2015
- Conf. on Computer and Robot Vision, 2007-2011, 2015, 2018
- Int. Conf. on CAD/CG 2015, 2017, 2021, 2023, 2025
- Int. Conf. on Virtual Reality 2023
- Asian Conf. on Machine Learning 2021
- Asian Conf. on Computer Vision 2016
- Int. Symp. on Visual Computing 2023-2025
- Int. Conf. on Computer Vision Theory and Applications 2023
- Int. Conf. on Machine Vision and Machine Learning 2023
- Int. Conf. on Software Engineering and Artificial Intelligence 2023
- Int. Joint Conf. on Computer Vision and Pattern Recognition 2023
- Workshop on Artificial Intelligence with and for Learning Sci. 2023
- Int. Conf. on Pattern Recognition and Intelligent Systems 2022, 2023
- Int. Workshop on Pattern Recognition 2019, 2022
- Int. Conf. on Image Processing and Vision Engineering 2021
- Int. Conf. on Image, Video Processing and Artificial Intelligence 2020
- Pacific-Rim Symp. on Image and Video Technology 2019
- Int. Conf. on Signal Processing and Multimedia Applications 2016, 2017, 2019
- Int. Conf. on Smart Multimedia 2018
- Int. Symp. on Intelligent Systems Technologies and Applications 2018
- Technical Briefs and Poster of SIGGRAPH Asia, 2013-2015, 2017
- Int. Conf. on Multimedia Systems and Signal Processing 2017
- Int. Conf. on Signal and Image Processing 2013
- IEEE Symp. on Web Society 2011
- Canadian Conf. on Electrical and Computer Engineering, 2009
- Int. C* Conf. on Computer Science & Software Engineering, 2009

Reviewer for Journals

- ACM Transactions on Graphics
- ACM Transactions on Intelligent Systems and Technology
- IEEE Transactions on Pattern Analysis and Machine Intelligence
- IEEE Transactions on Neural Networks and Learning Systems
- IEEE Transactions on Visualization and Computer Graphics
- IEEE Transactions on Image Processing
- IEEE Transactions on Multimedia
- IEEE Transactions on Signal Processing
- IEEE Transactions on Circuits and Systems for Video Technology
- IEEE Transactions on Broadcasting
- IEEE Transactions on Systems, Man and Cybernetics

- IEEE Transactions on Artificial Intelligence
- IEEE Signal Processing Letters
- International Journal of Computer Vision (Springer)
- Computer Vision and Image Understanding (Elsevier)
- Computer Graphics Forum (Wiley)
- Computers & Graphics (Elsevier)
- Pattern Recognition (Elsevier)
- Pattern Recognition Letters (Elsevier)
- Machine Vision and Applications (Springer)
- Multimedia Systems (Springer)
- Neural Computing and Applications (Springer)
- Neurocomputing (Elsevier)
- Image and Vision Computing (Elsevier)
- Robotics and Autonomous Systems (Elsevier)
- Journal of Visual Communication and Image Representation (Elsevier)
- Signal Processing: Image Communication (Elsevier)
- Computational Visual Media (Springer)
- International Journal of Image and Graphics (World Scientific)
- International Journal of Pattern Recognition and Artificial Intelligence (World Scientific)
- IPSJ Transactions on Computer Vision and Applications
- Journal of Electronic Imaging (SPIE)
- EURASIP Journal on Image and Video Processing
- Online Information Review (Emerald)
- Entropy (MDPI)
- Journal of Medical Systems (Springer)
- Medical Engineering & Physics (Elsevier)
- Journal of Real-Time Image Processing (Springer)
- Advances in Space Research (Elsevier)
- Computer-Aided Design (Elsevier)
- The Journal of Ocean Technology (Marine Institute)

Reviewer for Conferences

- SIGGRAPH
- SIGGRAPH Asia
- Eurographics
- European Conference on Computer Vision
- IEEE Scientific Visualization
- Eurographics Conference on Visualization
- Eurographics Workshop on Rendering

- Pacific Conference on Computer Graphics and Applications
- International Conference on Pattern Recognition
- IEEE Winter Conference on Applications of Computer Vision
- International Conference on 3D Vision
- Asian Conference on Computer Vision
- Joint Conference on 3D Imaging Modeling Processing Visualization and Transmission
- International Symposium on 3D Data Processing Visualization and Transmission
- Symposium on Geometry Processing
- Shape Modeling International
- Computational Aesthetics
- Computer Science and Electronic Engineering Conference

Reviewer for Granting Agencies

- Natural Sciences and Engineering Research Council of Canada (NSERC)
- Canada Foundation for Innovation (CFI)
- Mathematics of Information Technology and Complex Systems (Mitacs)
- Israel Science Foundation (ISF)
- Oak Ridge Associated Universities (ORAU)
- ETH Zurich Research Grants
- Natural Science Foundation of China (NSFC)

Examiner for Ph.D. Thesis

- Keyhan Najafian Supervisor: Drs. Lingling Jin & Ian Stavness 2025.10
Department of Computer Science, Univ. of Saskatchewan
- Libo Long Supervisor: Dr. Jochen Lang 2025.07
School of Electrical Engineering and Computer Science, Univ. of Ottawa
- Boujemaa Guermazi Supervisor: Dr. Naimul Mefraz Khan 2025.04
Department of Electrical, Computer, and Biomedical Engineering, Toronto Metropolitan Univ.
- Sukla Satapathy Supervisor: Dr. Rajiv Ranjan Sahay 2023.10
Department of Computer Science and Engineering, Indian Inst. of Technology Kharagpur
- Keivan Nalaie Supervisor: Dr. Rong Zheng 2023.07
Department of Computing and Software, McMaster Univ.
- Amir Nazemi Supervisor: Dr. Paul Fieguth 2023.06
Department of Systems Design Engineering, Univ. of Waterloo
- Yangdi Lu Supervisor: Dr. Wenbo He 2022.09
Department of Computing and Software, McMaster Univ.
- Terrance DeVries Supervisor: Dr. Graham Taylor 2021.09
School of Engineering, Univ. of Guelph

- Bojian Wu Supervisor: Dr. Hui Huang 2019.11
Shenzhen Institutes of Advanced Technology, Univ. of Chinese Academy of Sciences
- Elham Etemad Supervisor: Dr. Qigang Gao 2018.11
Faculty of Computer Science, Dalhousie Univ.
- Yixin Chen Supervisor: Dr. Wenbo He 2017.10
School of Computer Science, McGill Univ.
- Ke Xie Supervisors: Drs. Baoquan Chen & Hui Huang 2016.05
Shenzhen Institutes of Advanced Technology, Univ. of Chinese Academy of Sciences
- Qian Zheng Supervisors: Drs. Baoquan Chen & Hui Huang 2015.04
Shenzhen Institutes of Advanced Technology, Univ. of Chinese Academy of Sciences
- Feilong Yan Supervisors: Drs. Baoquan Chen & Hui Huang 2014.11
Shenzhen Institutes of Advanced Technology, Univ. of Chinese Academy of Sciences
- Yangyan Li Supervisor: Dr. Baoquan Chen 2013.05
Shenzhen Institutes of Advanced Technology, Univ. of Chinese Academy of Sciences
- Gang Hu Supervisor: Dr. Qigang Gao 2012.06
Faculty of Computer Science, Dalhousie Univ.
- Ke Jia Supervisor: Dr. Nianjun Liu 2012.05
College of Engineering and Computer Science, Australian National Univ.
- Xiaonan Wu Supervisor: Dr. Wolfgang Banzhaf 2011.12
Department of Computer Science, Memorial Univ.
- Ting Hu Supervisor: Dr. Wolfgang Banzhaf 2010.01
Department of Computer Science, Memorial Univ.

Examiner for M.Sc. Thesis

- Abdullah Al-Hayali Supervisor: Dr. Eran Ukwatta 2022.09
School of Engineering, Univ. of Guelph
- Raj Patel Supervisor: Drs. Meysar Zeinali & Kalpdrum Passi 2021.08
Department of Math and Computer Science, Laurentian Univ.
- Sara Ayubian Supervisors: Drs. Shadi Alawneh, George Miminis, Martin Richard 2017.07
Department of Computer Science, Memorial Univ.
- Abdelrahman Ahmed Supervisor: Dr. Mohamed Shehata 2016.09
Faculty of Engineering and Applied Science, Memorial Univ.
- Wei Sun Supervisor: Dr. Hui Huang 2015.04
Shenzhen Institutes of Advanced Technology, Univ. of Chinese Academy of Sciences
- Sahand Seifi Supervisor: Dr. Oscar Meruvia-Pastor 2015.03
Department of Computer Science, Memorial Univ.
- Jiapei Zhang Supervisor: Dr. Baoquan Chen 2013.05

Shenzhen Institutes of Advanced Technology, Univ. of Chinese Academy of Sciences

- Man Liu Supervisor: Dr. Siwei Lu 2011.03
Department of Computer Science, Memorial Univ.
- Jason Normore Supervisor: Dr. Wolfgang Banzhaf 2010.12
Department of Computer Science, Memorial Univ.
- David Churchill Supervisor: Dr. Andrew Vardy 2009.06
Department of Computer Science, Memorial Univ.
- Ferdaus Syeda Supervisor: Dr. Andrew Vardy 2008.11
Department of Computer Science, Memorial Univ.

RESEARCH CONTRIBUTIONS

Refereed Articles in Prestigious Journals¹

1. *Li Y., *Wang M., Gong M., Lu Y., & Liu L.: FER-former: Multimodal transformer for facial expression recognition. *IEEE Transactions on Multimedia*. 2024.
2. Zhang R., Pan S., Lv C., Gong M., & Huang H.: Architectural Co-LOD generation. *ACM Transactions on Graphics* 43(6 - SIGGRAPH Asia). December 2024.
3. Xu J., Gong M., Zhang H., Huang H., & Hu R.: Neural packing: From visual sensing to reinforcement learning. *ACM Transactions on Graphics* 42(6 - SIGGRAPH Asia): 1-11. December 2023.
4. *Wang M., *Cai H., Han X., *Zhou J., & Gong M.: STNet: Scale Tree Network with multi-level auxiliator for crowd counting. *IEEE Transactions on Multimedia* 25: 2074-2084. January 2023.
5. Liu Y., Cui R., Xie K., Gong M., & Huang H.: Aerial path planning for online real-time exploration and offline high-quality reconstruction of large-scale urban scenes. *ACM Transactions on Graphics* 40(6 - SIGGRAPH Asia): 1-16. December 2021.
6. *Zuo X., *Wang S., Zheng J., Yu W., Gong M., Yang R., & Cheng L.: SparseFusion: Dynamic human avatar modeling from sparse RGBD images. *IEEE Transactions on Multimedia* 23: 1617-1629. June 2021.
7. Hu R., Xu J., Chen B., Gong M., Zhang H., & Huang H.: TAP-Net: Transport-and-pack using reinforcement learning. *ACM Transactions on Graphics* 39(6 - SIGGRAPH Asia): 1-15. November 2020.
8. Zhou X., Xie K., Huang K., Liu Y., Zhou Y., Gong M., & Huang H.: Offsite aerial path planning for efficient urban scene reconstruction. *ACM Transactions on Graphics* 39(6 - SIGGRAPH Asia): 1-16. November 2020.
9. *Yi Z., Chen Z., *Cai H., *Mao W., Gong M., & Zhang H.: BSD-GAN: Branched generative adversarial networks for scale-disentangled representation learning and image synthesis. *IEEE Transactions on Image Processing* 29: 9073-9083. August 2020.

¹ An asterisk (*) preceding a name denotes a student or postdoctoral researcher under my supervision.

10. *Zhou J., *Wang M., *Mao W., Gong M., & Liu X.: SiamesePointNet: A Siamese Point Network architecture for learning 3D shape descriptor. *Computer Graphics Forum* 39(1): 309-321. February 2020.
11. Wu S., Bertholet P., Huang H., Cohen-Or D., Gong M., & Zwicker M.: Structure-aware data consolidation. *IEEE Transactions on Pattern Analysis and Machine Intelligence* 40(10): 2529-2537. October 2018.
12. Xie K., Yang H., Huang S., Lischinski D., Christie M., Xu K., Gong M., Cohen-Or D., & Huang H.: Creating and chaining camera moves for quadrotor videography. *ACM Transactions on Graphics* 37(4 - SIGGRAPH): 1-13. August 2018.
13. Wu B., Zhou Y., *Qian Y., Gong M., & Huang H.: Full 3D reconstruction of transparent objects. *ACM Transactions on Graphics* 37(4 - SIGGRAPH): 1-11. August 2018.
14. Huang H., Xie K., Ma L., Lischinski D., Gong M., Tong X., & Cohen-Or D.: Appearance modeling via proxy-to-image alignment. *ACM Transactions on Graphics* 37(1): 1-15. January 2018.
15. Zheng Q., Fan X., Gong M., Sharf A., Deussen O., & Huang H.: 4D reconstruction of blooming flowers. *Computer Graphics Forum* 36(6): 405-417. September 2017.
16. *Wang Y., Li J., Nie F., Theisel H., Gong M., & Lehmann D.: Linear discriminative star coordinates for exploring class and cluster separation of high dimensional data. *Computer Graphics Forum* 37(3 - EuroVis): 401-410. June 2017.
17. Zhou Y., Shi H., Lischinski D., Gong M., Kopf J., & Huang H.: Analysis and controlled synthesis of inhomogeneous textures. *Computer Graphics Forum* 36(2 - Eurographics): 199-212. May 2017.
18. Huang H., Lischinski D., Hao Z., Gong M., Christie M., & Cohen-Or D.: Trip synopsis: 60km in 60sec. *Computer Graphics Forum* 35(7 - Pacific Graphics): 107-116. October 2016.
19. Yin K., Huang H., Long P., Gaissinski A., Gong M., & Sharf A.: Full 3D plant reconstruction via intrusive acquisition. *Computer Graphics Forum* 35(1): 272-284. February 2016.
20. Wu S., Huang H., Gong M., Zwicker M., & Cohen-Or D.: Deep points consolidation. *ACM Transactions on Graphics* 34(6 - SIGGRAPH Asia): 1-13. November 2015.
21. Zhou Y., Yin K., Huang H., Zhang H., Gong M., & Cohen-Or D.: Generalized cylinder decomposition. *ACM Transactions on Graphics* 34(6 - SIGGRAPH Asia): 1-14. November 2015.
22. Averbuch-Elor H., *Wang Y., *Qian Y., Gong M., Kopf J., Zhang H., & Cohen-Or D.: Distilled collections from textual image queries. *Computer Graphics Forum* 34(2 - Eurographics): 131-142. May 2015.
23. Gong M., *Qian Y., & Cheng L.: Integrated foreground segmentation and boundary matting for live videos. *IEEE Transactions on Image Processing* 24(4): 1356-1370. April 2015.
24. Yin K., Huang H., Zhang H., Gong M., Cohen-Or D., & Chen B.: Morfit: Interactive surface reconstruction from incomplete point clouds with curve-driven topology and geometry control. *ACM Transactions on Graphics* 33(6 - SIGGRAPH Asia): 1-12. December 2014.
25. Wu S., Sun W., Long P., Huang H., Cohen-Or D., Gong M., Deussen O., & Chen B.: Quality-driven Poisson-guided autoscanning. *ACM Transactions on Graphics* 33(6 - SIGGRAPH Asia): 1-12. December 2014.
26. *Strong G. & Gong M.: Self-sorting map: An efficient algorithm for presenting multimedia data in structured layout. *IEEE Transactions on Multimedia* 16(4): 1045-1058. June 2014.

27. Yan F., Gong M., Cohen-Or D., Deussen O., & Chen B.: Flower reconstruction from a single photo. *Computer Graphics Forum* 33(2 - Eurographics): 439-447. May 2014.
28. Sharf A., Huang H., Liang C., Zhang J., Chen B., & Gong M.: Mobility-trees for indoor scenes manipulation. *Computer Graphics Forum* 33(1): 2-14. February 2014.
29. *Wang Y., Gong M., Wang T., Cohen-Or D., Zhang H., & Chen B.: Projective analysis for 3D shape segmentation. *ACM Transactions on Graphics* 32(6 - SIGGRAPH Asia): 1-12. November 2013.
30. Huang H., Yin K., Gong M., Lischinski D., Cohen-Or D., Ascher U., & Chen B.: "Mind the gap": Tele-registration for structure-driven image completion. *ACM Transactions on Graphics* 32(6 - SIGGRAPH Asia): 1-10. November 2013.
31. Huang H., Wu S., Cohen-Or D., Gong M., Zhang H., Li G., & Chen B.: L1-medial skeleton of point cloud. *ACM Transactions on Graphics* 32(4 - SIGGRAPH): 1-8. July 2013.
32. Huang H., Wu S., Gong M., Cohen-Or D., Ascher U., & Zhang H.: Edge-aware point set resampling. *ACM Transactions on Graphics* 32(1): 1-12. January 2013.
33. Huang H., Gong M., Cohen-Or D., Ouyang Y., Tan F., & Zhang H.: Field-guided registration for feature-conforming shape composition. *ACM Transactions on Graphics* 31(6 - SIGGRAPH Asia): 1-11. November 2012. (Acceptance rate: 77/326=24%)
34. Liao M., Gao J., Yang R., & Gong M.: Video stereolization: Combining motion analysis with user interaction. *IEEE Transactions on Visualization and Computer Graphics* 18(7): 1079-1088. July 2012.
35. Cheng L., Gong M., Schuurmans D., & Caelli T.: Real-time discriminative background subtraction. *IEEE Transactions on Image Processing* 20(5): 1401-1414. May 2011.
36. Gong M. & Yang Y.-H.: Real-time stereo matching using orthogonal reliability-based dynamic programming. *IEEE Transactions on Image Processing* 16(3): 879-884. March 2007.
37. Gong M. & Yang Y.-H.: Fast unambiguous stereo matching using reliability-based dynamic programming. *IEEE Transactions on Pattern Analysis and Machine Intelligence* 27(6): 998-1003. June 2005.

Refereed Papers in Prestigious Conferences

38. Huang Q., Zhang R., Liu K., Gong M., Zhang H., & Huang H.: ArcPro: Architectural programs for structured 3D abstraction of sparse points. *IEEE/CVF Conference on Computer Vision and Pattern Recognition*. Nashville, TN, USA, June 11-15, 2025. (Highlights, Acceptance rate: 387/13008=3.0%)
39. Yi Z., Xie K., Lyu J., Gong M., & Huang H.: Where to render: Studying renderability for IBR of large-scale scenes. *IEEE Conference on Virtual Reality and 3D User Interfaces*: 356-366. Shanghai, China, March 25-29, 2023. (Acceptance rate: 120/612=21%)
40. Yang J., *Zuo X., *Wang S., Yu Z., Li X., Ni B., Gong M., & Cheng L.: Object wake-up: 3D object rigging from a single image. *European Conference on Computer Vision*: 311-327. Tel Aviv, Israel, October 24-28, 2022. (Acceptance rate: 1645/6773=28%)
41. Zou S., Guo C., *Zuo X., *Wang S., Wang P., Hu X., Chen S., Gong M., & Cheng L.: EventHPE: Event-based 3D human pose and shape estimation. *IEEE/CVF International Conference on Computer Vision*: 10976-10985. Online, October 11-17, 2021. (Acceptance rate: 1617/6236=26%)

42. Guo C., *Zuo X., *Wang S., Zou S., Sun Q., Deng A., Gong M., & Cheng L.: Action2Motion: Conditioned generation of 3D human motions. *ACM International Conference on Multimedia: 2021-2029*. Online, October 12-16, 2020. (Acceptance rate: 472/1698=28%)
43. Zou S., *Zuo X., *Qian Y., *Wang S., Xu C., Gong M., & Cheng L.: 3D human shape reconstruction from a polarization image. *European Conference on Computer Vision: 351-368*. Online, August 23-28, 2020. (Acceptance rate: 1361/5025=27%)
44. Wu Z., Song C., Zhou Y., Gong M., & Huang H.: EFANet: Exchangeable Feature Alignment Network for arbitrary style transfer. *AAAI Conference on Artificial Intelligence (34): 12305-12312*. New York, NY, USA, February 7-12, 2020. (Acceptance rate: 1591/7737=21%)
45. Song C., Wu Z., Zhou Y., Gong M., & Huang H.: ETNet: Error Transition Network for arbitrary style transfer. *Neural Information Processing Systems: 670-679*. Vancouver, BC, Canada, December 8-14, 2019. (Acceptance rate: 1428/6743=21%)
46. *Qian Y., Zheng Y., Gong M., & Yang Y.-H.: Simultaneous 3D reconstruction for water surface and underwater scene. *European Conference on Computer Vision: 776-792*. Munich, Germany, September 8-14, 2018. (Acceptance rate: 776/2439=32%)
47. *Yi Z., Zhang H., Tan P., & Gong M.: DualGAN: Unsupervised dual learning for image-to-image translation. *IEEE/CVF International Conference on Computer Vision: 2868-2876*. Venice, Italy, October 22-29, 2017. (Acceptance rate: 621/2143=29%)
48. *Qian Y., Gong M., & Yang Y.-H.: Stereo-based 3D reconstruction of dynamic fluid surfaces by global optimization. *IEEE/CVF Conference on Computer Vision and Pattern Recognition: 1269-1278*. Honolulu, HI, USA, July 21-26, 2017. (Acceptance rate: 783/2680=29%)
49. *Qian Y., Gong M., & Yang Y.-H.: 3D reconstruction of transparent objects with position-normal consistency. *IEEE/CVF Conference on Computer Vision and Pattern Recognition: 4369-4377*. Las Vegas, NV, USA, June 27-30, 2016. (Acceptance rate: 643/2145=30%)
50. *Qian Y., Gong M., & Yang Y.-H.: Frequency-based environment matting by compressive sensing. *IEEE/CVF International Conference on Computer Vision: 3532-3540*. Santiago, Chile, December 13-16, 2015. (Acceptance rate: 525/1698=31%)
51. *Yau T., Gong M., & Yang Y.-H.: Underwater camera calibration using wavelength triangulation. *IEEE/CVF Conference on Computer Vision and Pattern Recognition: 2499-2506*. Portland, OR, USA, June 25-27, 2013. (Oral, Acceptance rate: 60/1870=3.2%)
52. Gong M. & Cheng L.: Foreground segmentation of live videos using locally competing 1SVMs. *IEEE/CVF Conference on Computer Vision and Pattern Recognition: 2105-2112*. Colorado Springs, CO, USA, June 21-23, 2011. (Acceptance rate: 440/1677=26%)
53. Liao M., Zhang Q., Wang H., Yang R., & Gong M.: Modeling deformable objects from a single depth camera. *IEEE/CVF International Conference on Computer Vision: 167-174*. Kyoto, Japan, September 29-October 2, 2009. (Oral, Acceptance rate: 48/1327=3.6%)
54. Cheng L. & Gong M.: Realtime background subtraction from dynamic scenes. *IEEE/CVF International Conference on Computer Vision: 2066-2073*. Kyoto, Japan, September 29-October 2, 2009. (Acceptance rate: 308/1327=23%)
55. Wang L., Jin H., Yang R., & Gong M.: Stereoscopic inpainting: Joint color and depth completion from stereo images. *IEEE/CVF Conference on Computer Vision and Pattern Recognition: 1-8*. Anchorage, AK, USA, June 24-26, 2008. (Acceptance rate: 508/1593=32%)

56. Liao M., Wang L., Yang R., & Gong M.: Light fall-off stereo. *IEEE/CVF Conference on Computer Vision and Pattern Recognition*: 1-8. Minneapolis, MN, USA, June 18-23, 2007. (Acceptance rate: 351/1250=28%)
57. Gong M.: Enforcing temporal consistency in real-time stereo estimation. *European Conference on Computer Vision (III)*: 564-577. Graz, Austria, May 7-13, 2006. (Acceptance rate: 193/900=21%)
58. Gong M. & Yang Y.-H.: Near real-time reliable stereo matching using programmable graphics hardware. *IEEE/CVF Conference on Computer Vision and Pattern Recognition (I)*: 924-931. San Diego, CA, USA, June 20-26, 2005. (Acceptance rate: 322/1200=27%)
59. Gong M. & Yang Y.-H.: Fast stereo matching using reliability-based dynamic programming and consistency constraints. *IEEE/CVF International Conference on Computer Vision (I)*: 610-617. Nice, France, October 13-16, 2003. (Acceptance rate: 200/943=21%)

Other Refereed Journal Articles

60. Pan S., Zhang R., Liu Y., Gong M., & Huang H.: Building LOD representation for 3D urban scenes. *ISPRS Journal of Photogrammetry and Remote Sensing* 226: 16-32. August 2025.
61. Zhao H., Wang Y., Lu W., *Yi Z., Liu J., & Gong M.: Real-time dual-eye collaborative eyeblink detection with contrastive learning. *Pattern Recognition* 162. June 2025.
62. *Huang X. & Gong M.: Attention-guided deep reinforcement learning for realistic neural painting. *IEEE Access* 13: 99291-99302. June 2025.
63. Lu W., Jiang X., Jin X., Yang Y.-L., Gong M., Shi K., Wang T., & Zhao H.: GRIG: Data-efficient generative residual image inpainting. *Computational Visual Media*. 2024.
64. *Wang M., *Li Y., *Zhou J., Taylor G. W., & Gong M.: GCNet: Probing self-similarity learning for generalized counting network. *Pattern Recognition* 153. September 2024.
65. *Wang M., *Zhou J., *Cai H., & Gong M.: CrowdMLP: Weakly-supervised crowd counting via multi-granularity MLP. *Pattern Recognition* 144. December 2023.
66. Liu Y., Cui R., Xie K., Gong M., & Huang H.: PA-Net: Plane attention network for real-time urban scene reconstruction. *Computers & Graphics* 115: 254-262. October 2023.
67. *Huang X. & Gong M.: Enhanced face aging using dual-learning and multi-attention mechanism. *Applied Intelligence* 53(20): 23383-23397. October 2023.
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70. *Mao W., *Wang M., Huang H., & Gong M.: A robust framework for multi-view stereopsis. *The Visual Computer* 38(5): 1539-1551. May 2022.
71. Yang J., Ma Y., *Zuo X., *Wang S., Gong M., & Cheng L.: 3D pose estimation and future motion prediction from 2D images. *Pattern Recognition* 124. April 2022.
72. Guo C., *Zuo X., *Wang S., Liu X., Zou S., Gong M., & Cheng L.: Action2video: Generating videos of human 3D actions. *International Journal of Computer Vision* 130(2): 285-315. February 2022.

73. *Wang M., *Cai H., *Zhou J., & Gong M.: Interlayer and intralayer scale aggregation for scale-invariant crowd counting. *Neurocomputing* 441: 128-137. June 2021.
74. *Huang X., *Wang M., & Gong M.: Fine-grained talking face generation with video reinterpretation. *The Visual Computer* 37: 95-105. September 2020.
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84. *Yin S., Zhao X., Wang W., & Gong M.: Efficient multilevel image segmentation through fuzzy entropy maximization and graph cut optimization. *Pattern Recognition* 47(9): 2894-2907. September 2014.
85. Wang L., Yang R., Gong M., & Liao M.: Real-time stereo using approximated joint bilateral filtering and dynamic programming. *Journal of Real-Time Image Processing* 9(3): 447-461. September 2014.
86. *Hoque E., Hoerber O., & Gong M.: CIDER: Concept-based image diversification, exploration, and retrieval. *Information Processing & Management* 49(5): 1122-1138. September 2013.
87. *Hoque E., Hoerber O., *Strong G., & Gong M.: Combining conceptual query expansion and visual search results exploration for web image retrieval. *Journal of Ambient Intelligence and Humanized Computing* 4(3): 389-400. June 2013.
88. Wang L., Gong M., Zhang C., Yang R., Zhang C., & Yang Y.-H.: Automatic real-time video matting using time-of-flight camera and multichannel Poisson equations. *International Journal of Computer Vision* 97(1): 104-121. March 2012.

89. *Hoque E., Hoerber O., & Gong M.: Balancing the trade-offs between diversity and precision for web image search using concept-based query expansion. *Journal of Emerging Technologies in Web Intelligence* 4(1): 26-34. February 2012.
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91. *Strong G. & Gong M.: Similarity-based image organization and browsing using multi-resolution self organizing map. *Image and Vision Computing* 29(11): 774-786. October 2011.
92. Gong M.: Real-time joint disparity and disparity flow estimation on programmable graphics hardware. *Computer Vision and Image Understanding* 113(1): 90-100. January 2009.
93. Gong M., Yang R., Wang L., & Gong M.: A performance study on different cost aggregation approaches used in real-time stereo matching. *International Journal of Computer Vision* 75(2): 283-296. November 2007.
94. Gong M. & Yang Y.-H.: Rayset: A taxonomy for image-based rendering. *International Journal of Image and Graphics* 6(3): 313-339. July 2006.
95. Gong M. & Yang Y.-H.: Estimate large motions using the reliability-based motion estimation algorithm. *International Journal of Computer Vision* 68(3): 319-330. July 2006.
96. Gong M. & Yang Y.-H.: Camera field rendering for static and dynamic scenes. *Graphical Models* 67(2): 73-99. March 2005.
97. Gong M. & Yang Y.-H.: Quadtree-based genetic algorithm and its applications to computer vision. *Pattern Recognition* 37(8): 1723-1733. August 2004.
98. Gong M. & Yang Y.-H.: Genetic-based stereo algorithm and disparity map evaluation. *International Journal of Computer Vision* 47(1-3): 63-77. April-June 2002.
99. Gong M. & Yang Y.-H.: Layer-based morphing. *Graphical Models* 63(1): 45-59. January 2001.
100. Qin K., Gong M., Guan Y., & Wang W.: A new method for speeding up ray tracing NURBS surfaces. *Computers & Graphics* 21(5): 577-586. September-October 1997.
101. Gong M. & Qin K.: Ray tracing techniques for architectural modeling and environmental images. *China Journal of Image and Graphics* 1(5): 448-454. November 1996.
102. Qin K., Gong M., Wu B., & Tang Z.: The genetic minimum weight triangulation of planar points. *Journal of Computer-Aided Design and Computer Graphics* 8(Suppl): 141-147. September 1996.
103. Qin K., Gong M., & Tong G.: Fast ray tracing NURBS surfaces. *Journal of Computer Science and Technology* 11(1): 17-29. January 1996.

Refereed Book Chapters

104. *Huang X. & Gong M.: Landmark-guided conditional GANs for face aging. *Lecture Notes in Computer Science* (13231), *Image Analysis and Processing*: 270-283. Springer, 2022.
105. *Mao W., Gong M., *Huang X., *Cai H., & *Yi Z.: A global-matching framework for multi-view stereopsis. *Lecture Notes in Computer Science* (11678), *Computer Analysis of Images and Patterns*: 635-647. Springer, 2019.

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107. *Qian Y., *Yuan H., & Gong M.: Budget-driven big data classification. *Lecture Notes in Computer Science (9091), Advances in artificial intelligence: 71-83*. Springer International Publishing, 2015.
108. *Qian Y., Gong M., & Cheng L.: STOCS: An efficient self-tuning multiclass classification approach. *Lecture Notes in Computer Science (9091), Advances in artificial intelligence: 291-306*. Springer International Publishing, 2015.
109. *Strong G., Jensen R., Gong M., & Elster A. C.: Organizing visual data in structured layout by maximizing similarity-proximity correlation. *Lecture Notes in Computer Science (8034), Advances in Visual Computing: 703-713*. Springer Berlin Heidelberg, 2013.
110. Hoerber O. & Gong M.: A granular computing perspective on image organization within an image retrieval context. *Lecture Notes in Computer Science (7414), Rough Sets and Knowledge Technology: 320-328*. Springer Berlin Heidelberg, 2012.
111. *Zheng J. & Gong M.: Real-time image alignment for a gyro-visual hybrid pointing device. *Lecture Notes in Computer Science (7324), Image Analysis and Recognition (I): 174-183*. Springer Berlin Heidelberg, 2012.
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115. *Strong G. & Gong M.: Browsing a large collection of community photos based on similarity on GPU. *Lecture Notes in Computer Science (5359), Advances in Visual Computing: 390-399*. Springer Berlin Heidelberg, 2008.
116. Robidoux N., Turcotte A., Gong M., & Tousignant A.: Fast exact area image upsampling with natural biquadratic histosplines. *Lecture Notes in Computer Science (5112), Image Analysis and Recognition: 85-96*. Springer Berlin Heidelberg, 2008.
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Other Refereed Conference Proceeding Papers

118. *Huang Z. & Gong M.: Textured-GS: Gaussian splatting with spatially defined color and opacity. *Graphics Interface*. Kelowna, BC, Canada, May 26-29, 2025.
119. *Huang Z., *Shi Y., & Gong M.: Visibility-aware pixelwise view selection for multi-view stereo matching. *International Conference on Pattern Recognition: 130-144*. Kolkata, India, December 1-5, 2024.

120. *Wang M., Yuan S., Li Z., Zhu L., *Buys E., & Gong M.: Language-guided zero-shot object counting. *ICME Workshop on Visual-Language Alignment in Text-Guided Multi-Modal Generation*: 1-6. Niagara Falls, ON, Canada, July 15-19, 2024.
121. *Huang Z., *Shi Y., Bruce N., & Gong M.: SealD-NeRF: Interactive pixel-level editing for dynamic scenes by neural radiance fields. *Conference on Robots and Vision*. Guelph, ON, Canada, May 27-31, 2024.
122. *Yang Z. & Gong M.: Reconstructing 3D shapes as a union of boxes from multi-view images. *International Conference on Pattern Recognition and Intelligent Systems*: 6-12. Online, July 28-30, 2023.
123. *Wang M., *Cai H., Dai Y., & Gong M.: Dynamic mixture of counter network for location-agnostic crowd counting. *IEEE/CVF Winter Conference on Applications of Computer Vision*: 167-177. Waikoloa, HI, USA, January 3-7, 2023.
124. *Wang M., *Cai H., *Zhou J., & Gong M.: Stochastic multi-scale aggregation network for crowd counting. *International Conference on Acoustics, Speech, and Signal Processing*: 2008-2012. Online, May 4-8, 2020.
125. *Wang M., *Cai H., *Huang X., & Gong M.: ADNet: Adaptively dense convolutional neural networks. *IEEE/CVF Winter Conference on Applications of Computer Vision*: 990-999. Snowmass Village, CO, USA, March 2-5, 2020.
126. *Huang X., *Wang M., & Gong M.: Hierarchically-fused generative adversarial network for text to realistic image synthesis. *Conference on Computer and Robot Vision*: 73-80. Kingston, ON, Canada, May 29-31, 2019. (Best Computer Vision Paper Award)
127. *Mao W., *Wang M., *Zhou J., & Gong M.: Semi-dense stereo matching using dual CNNs. *IEEE/CVF Winter Conference on Applications of Computer Vision*: 1588-1597. Waikoloa, HI, USA, January 7-11, 2019.
128. *Wang M., *Zhou J., *Mao W., & Gong M.: Multi-scale convolution aggregation and stochastic feature reuse for DenseNets. *IEEE/CVF Winter Conference on Applications of Computer Vision*: 321-330. Waikoloa, HI, USA, January 7-11, 2019.
129. *Cai H., Ye S., Vardy A., & Gong M.: 3D visual homing for commodity UAVs. *Conference on Computer and Robot Vision*: 269-276. Toronto, ON, Canada, May 9-11, 2018.
130. *Mao W. & Gong M.: Disparity filtering with 3D convolutional neural networks. *Conference on Computer and Robot Vision*: 246-253. Toronto, ON, Canada, May 9-11, 2018.
131. *Kazemi F. M., Banzhaf W., & Gong M.: Human recognition through walking styles by multiwavelet transform. *International Conference on Information and Knowledge Technology*: 47-53. Hamadan, Iran, September 7-8, 2016.
132. *Wang Y., *Qian Y., *Li Y., Gong M., & Banzhaf W.: Artificial multi-bee-colony algorithm for k-nearest-neighbor fields search. *The Genetic and Evolutionary Computation Conference*: 1037-1044. Denver, CO, USA, July 20-24, 2016.
133. *Chen Z., Shehata M. S., Gong M., Carnahan H., Dubrowski A., & Smith A.: Feasibility of a semi-automated approach to grading point of care ultrasound image generation skills. *International Conference on Image and Vision Computing New Zealand*: 1-5. Auckland, New Zealand, November 23-24, 2015.

134. Xie X., Gong W., Gong M., & Wu T.: Recovering intrinsic images from image sequences using total variation models. *IEEE International Conference on Image Processing*: 3570-3574. Quebec City, QC, Canada, September 27-30, 2015.
135. Gong M. & Cheng L.: Incorporating estimated motion in real-time background subtraction. *IEEE International Conference on Image Processing*: 3265-3268. Brussels, Belgium, September 11-14, 2011. (Oral, Acceptance rate: 336/2245=15%)
136. *Hoque E., Hoeber O., & Gong M.: Evaluating the trade-offs between diversity and precision for web image search using concept-based query expansion. *International Conference on Web Intelligence and Intelligent Agent Technology* (3): 130-133. Lyon, France, August 22, 2011.
137. *Strong G. & Gong M.: Data organization and visualization using self-sorting map. *Graphics Interface Conference*: 199-206. St. John's, NL, Canada, May 25-27, 2011. (Oral, Acceptance rate: 29/74=39%)
138. *Gedge J., Gong M., & Yang Y.-H.: Refractive epipolar geometry for underwater stereo matching. *Conference on Computer and Robot Vision*: 146-152. St. John's, NL, Canada, May 25-27, 2011. (Oral, Acceptance rate: 28/74=38%)
139. Gong M., Wang L., Yang R., & Yang Y.-H.: Real-time video matting using multichannel Poisson equations. *Graphics Interface Conference*: 89-96. Ottawa, ON, Canada, May 31-June 2, 2010. (Oral, Acceptance rate: 33/88=38%)
140. Liao M., Zhang Q., Yang R., & Gong M.: A volumetric approach for merging range images of semi-rigid objects captured at different time instances. *International Symposium on 3D Data Processing, Visualization and Transmission*. Paris, France, May 17-20, 2010.
141. *Strong G. & Gong M.: Organizing and browsing photos using different feature vectors and their evaluations. *International Conference on Image and Video Retrieval*: 1-8. Santorini, Greece, July 8-10, 2009. (Oral, Acceptance rate: 17/127=13%)
142. Gong M. & Yang Y.-H.: Near-real-time image matting with known background. *Conference on Computer and Robot Vision*: 81-87. Kelowna, BC, Canada, May 25-27, 2009.
143. Robidoux N., Gong M., Cupitt J., Turcotte A., & Martinez K.: CPU, SMP and GPU implementations of Nohalo level 1, a fast co-convex antialiasing image resampler. *International C* Conference on Computer Science & Software Engineering*: 185-195. Montreal, QC, Canada, May 19-21, 2009.
144. Gong M. & Cheng L.: Real-time foreground segmentation on GPUs using local online learning and global graph cut optimization. *International Conference on Pattern Recognition*: 1-4. Tampa, FL, USA, December 8-11, 2008.
145. *Zhang Y., Gong M., & Yang Y.-H.: Local stereo matching with 3D adaptive cost aggregation for slanted surface modeling and sub-pixel accuracy. *International Conference on Pattern Recognition*: 1-4. Tampa, FL, USA, December 8-11, 2008. (Oral, Acceptance rate: 295/1631=18%)
146. Liao M., Wang L., Yang R., & Gong M.: Real-time light fall-off stereo. *IEEE International Conference on Image Processing*: 1380-1383. San Diego, CA, USA, October 12-15, 2008.
147. *Zhang Y., Gong M., & Yang Y.-H.: Real-time multi-view stereo algorithm using adaptive-weight Parzen window and local winner-take-all optimization. *Conference on Computer and Robot Vision*: 113-120. Windsor, ON, Canada, May 28-30, 2008. (Oral)

148. Gong M., Selzer J. M., Lei C., & Yang Y.-H.: Real-time backward disparity-based rendering for dynamic scenes using programmable graphics hardware. *Graphics Interface Conference*: 241-248. Montreal, QC, Canada, May 28-30, 2007. (Oral, Acceptance rate: 43/89=48%)
149. Gong M.: Images restoration using an iterative dynamic programming approach. *Conference on Computer and Robot Vision*: 395-402. Montreal, QC, Canada, May 28-30, 2007.
150. Gong M. & Yang Y.-H.: Disparity flow estimation using orthogonal reliability-based dynamic programming. *International Conference on Pattern Recognition (II)*: 70-73. Hong Kong, August 20-24, 2006. (Oral, Acceptance rate: 311/2029=15%)
151. Gong M.: A GPU-based algorithm for estimating 3D geometry and motion in near real-time. *Conference on Computer and Robot Vision*: 10. Quebec City, QC, Canada, June 7-9, 2006. (Oral, Acceptance rate: 35/113=35%)
152. *Langille A. & Gong M.: An efficient match-based duplication detection algorithm. *Conference on Computer and Robot Vision*: 64. Quebec City, QC, Canada, June 7-9, 2006.
153. Wang L., Gong M., Gong M., & Yang R.: How far can we go with local optimization in real-time stereo matching: A performance study on different cost aggregation approaches. *International Symposium on 3D Data Processing, Visualization and Transmission*: 129-136. Chapel Hill, NC, USA, June 14-16, 2006.
154. Wang L., Liao M., Gong M., Yang R., & Nister D.: High-quality real-time stereo using adaptive cost aggregation and dynamic programming. *International Symposium on 3D Data Processing, Visualization and Transmission*: 798-805. Chapel Hill, NC, USA, June 14-16, 2006. (Oral)
155. Gong M. & Yang R.: Image-gradient-guided real-time stereo on graphics hardware. *International Conference on 3-D Digital Imaging and Modeling*: 548-555. Ottawa, ON, Canada, June 13-17, 2005. (Oral, Acceptance rate: 39/127=31%)
156. Gong M. & Yang Y.-H.: Estimate large motions using reliability-based dynamic programming. *IEEE International Conference on Image Processing (IV)*: 2559-2562. Singapore, October 24-27, 2004.
157. Gong M. & Yang Y.-H.: Uniform sampling for image-based rendering shiny objects. *Eurographics Short Papers*: 73-76. Grenoble, France, August 30-September 3, 2004.
158. Gong M.: Motion estimation using dynamic programming with selective path search. *International Conference on Pattern Recognition (IV)*: 203-206. Cambridge, United Kingdom, August 23-26, 2004.
159. Gong M. & Yang Y.-H.: Multi-resolution genetic algorithm and its application in motion estimation. *International Conference on Pattern Recognition (I)*: 644-647. Quebec City, QC, Canada, August 11-15, 2002.
160. Gong M. & Yang Y.-H.: Multi-resolution stereo matching using genetic algorithm. *CVPR Workshop on Stereo and Multi-Baseline Vision*: 21-29. Kauai, HI, USA, December 9-10, 2001. (Oral, Acceptance rate: 19/66=29%)
161. Gong M. & Yang Y.-H.: Genetic-based multiresolution color image segmentation. *Vision Interface*: 141-148. Ottawa, ON, Canada, June 7-9, 2001.
162. Gong M. & Yang Y.-H.: The rayset and its applications. *Graphics Interface Conference*: 71-80. Ottawa, ON, Canada, June 7-9, 2001. (Oral, Acceptance rate: 27/56=48%)

163. Qin K., Wang W., & Gong M.: A genetic algorithm for the minimum weight triangulation. *International Conference on Evolutionary Computation*: 541-546. Indianapolis, IN, USA, April 13-16, 1997.

Refereed Conference Posters and Presentations

164. *Hoque E., Hoerber O., & Gong M.: A concept-based interactive visualization approach to web image search. *IEEE Information Visualization Conference (Poster)*. Providence, RI, USA, October 23-28 2011.
165. *Maynard A. & Gong M.: Real-time seismic wave modeling and visualization. *Graphics Interface Conference (Poster)*. Ottawa, ON, Canada, May 31-June 2 2010.
166. Wang H., Liao M., Zhang Q., Yang R., & Gong M.: Image-based physics-driven modeling of 4D fluid. *Mid-West Graphics Workshop*. Iowa City, IA, USA, October 19-21 2007.
167. Gong M. & Yang Y.-H.: The super sprite: A graphic primitive based on light field. *Western Computer Graphics Symposium*. Silver Star, BC, Canada, March 24-27 2002.

Patents and Copyrights

- Huang H., Wu S., Gong M., Zwicker M., & Cohen-Or D.: Three-dimensional point cloud model re-establishment method and apparatus. *US patent*. 2017.
- Huang H., Hao Z., Gong M., Lischinski D., & Cohen-Or D.: Navigation method based on three-dimensional scene. *PCT patent*, WO2016179825 A1. November 17, 2016. (Filed on May 14, 2015)
- Zhou Y., Huang H., Yin K., Cao X., Gong M., Zhang H., & Cohen-Or D.: Generalized cylinder-based 3D model decomposition method and system. *Chinese patent*. 2015.
- Huang H., Wu S., Sun W., Long P., Gong M., Cohen-Or D., & Deussen O.: Point cloud three-dimensional model reconstruction method and system. *PCT patent*, WO2015188445 A1. December 17, 2015. (Filed on August 19, 2014)
- Huang H., Hao Z., Gong M., Lischinski D., & Cohen-Or D.: Scene importance based navigation system. *Software Copyright*, Chinese Registration No: 2015SR066036. 2015. (Registration date: April 21, 2015)
- Huang H., Yin K., Gong M., Chen B., & *Wang Y.: Image repairing method and device. *PCT patent*, WO2014169561 A1. October 23, 2014. (Filed on September 13, 2013)
- Gong M.: Video segmentation method. *US patent*, US20130329987 A1. December 12, 2013. (Filed on June 11, 2012)
- *Wang Y., Wang T., Gong M., Chen B., Huang H., & Xie X.: Three-dimensional model segmentation method and segmentation system. *Chinese patent*, CN103218818 A. July 24, 2013. (Filed on April 19, 2013)
- Gong M.: Real-time image and video matting. *PCT patent*, US8320666 B2. February 17, 2011. (Filed on August 13, 2010; Granted on November 27, 2012)
- Gong M.: Fast stereo matching using reliability-based dynamic programming. *Software Copyright*, Canadian Registration No: 1023053, US Registration No: TXU001192131. August 23, 2004. (Registration date: August 23, 2004)

Invited Talks (other than conference presentations)

- Advanced rendering & modeling with 3D Gaussians
2025.08.04 *Visual Computing Center, Shenzhen Univ.* Shenzhen, China
2025.07.29 *State Key Laboratory for Novel Software Technology, Nanjing Univ.* Suzhou, China
2025.07.16 *School of Science, Zhejiang Sci-Tech University,* Hangzhou, China
- Exploring 3D modeling and counting as tools for precision agriculture
2024.11.26 *Institute of Agricultural Information, Jiangsu Academy of Agricultural Sciences.* Nanjing, China
2024.06.27 *School of Electrical and Information, Northeast Agricultural Univ.* Harbin, China
- Visibility-aware pixelwise view selection for multi-view stereo matching
2023.09.01 *Visual Computing Center, Shenzhen Univ.* Shenzhen, China
- Generalization in machine learning for counting problems
2023.08.31 *Visual Computing Center, Shenzhen Univ.* Shenzhen, China
2023.07.29 *Keynote speech at Int. Conf. on Pattern Recognition and Intelligent Systems.* Online
2023.03.29 *CSE/SHARCNET Seminar, McMaster Univ.* Hamilton, ON, Canada
- Enhancing learning capability of CNNs for fundamental vision problems
2022.04.20 *Department of Computer Science, Memorial Univ.* St. John's, NL, Canada
2021.12.17 *College of Computer Science & Software Engineering, Shenzhen Univ.* Online
- Deep neural networks for conditional visual synthesis
2021.12.01 *College of Computer Science & Software Engineering, Shenzhen Univ.* Online
- Novel network architectures for arbitrary image style transfer
2020.07.17 *Visual Computing Summer School, Shandong Univ.* Online
2020.05.14 *Symposia talk at Conference on Computer and Robot Vision.* Online
- Capturing transparent objects: From appearances to full 3D models
2018.11.15 *Faculty of Computer Science, Dalhousie Univ.* Halifax, NS, Canada
- Two routes for image-to-image translation: Rule-based vs. learning-based
2018.09.20 *Visual Computing Center, Shenzhen Univ.* Shenzhen, China
2017.12.15 *Center for Research in Computer Vision, Univ. of Central Florida.* Orlando, FL, USA
2017.11.17 *NSERC CREATE Data Analytics & Visualization Bootcamp.* Toronto, ON, Canada
- Rendering and modeling of transparent objects
2016.09.02 *Visual Computing Center, Shenzhen Univ.* Shenzhen, China
- Quality-driven autonomous scanning of complex objects
2016.10.28 *Department of Computer Science, Memorial Univ.* St. John's, NL, Canada
2016.05.20 *GeoICT Lab, York Univ.* Toronto, ON, Canada
- Modeling and analyzing 3D shapes using clues from 2D images
2015.06.04 *Symposia talk at Conference on Computer and Robot Vision.* Halifax, NS, Canada
2015.04.09 *Department of Computer Science, Memorial Univ.* St. John's, NL, Canada
- Tele-registration: A field-guided approach for feature-conforming shape composition

- 2013.05.21 *Bioinformatics Institute, A*STAR. Singapore*
- Arranging arbitrary data into structured layouts
- 2013.05.20 *Bioinformatics Institute, A*STAR. Singapore*
- Real-time video object cutout using locally competing 1SVMs
- 2012.10.24 *Department of Computer Science, Nanjing Univ. Nanjing, China*
- 2012.08.16 *Emerging Information and Technology Conference. Toronto, ON, Canada*
- Real-time video matting: Extraction of fuzzy foreground subjects from live footage
- 2010.04.02 *Department of Computer Science, Memorial Univ. St. John's, NL, Canada*
- Real-time background subtraction using support vector machine
- 2010.03.03 *Department of Computer Science, Nanjing Univ. Nanjing, China*
- 2010.02.25 *Institute of Computing Technology, Chinese Academy of Sciences. Beijing, China*
- 2008.10.28 *Coast-to-Coast Seminar, ACEnet/D-Drive/IRMACS/SHARCNET/WestGrid. Online*
- Joint color and depth inpainting from stereo images
- 2009.06.01 *CS VML Seminar, Simon Fraser Univ. Burnaby, BC, Canada*
- Separating foreground from backgrounds
- 2009.05.25 *Tutorial at Conference on Computer and Robot Vision. Kelowna, BC, Canada*
- Organizing and browsing large photo collections based on similarity on GPU
- 2008.12.05 *Faculty of Computer Science, Dalhousie Univ. Halifax, NS, Canada*
- Real-time rendering of dynamic scenes on graphics hardware
- 2007.11.22 *Department of Computer Science, Memorial Univ. St. John's, NL, Canada*
- Depth recovery using light fall-off property
- 2007.07.23 *Department of Computing Science, Univ. of Alberta. Edmonton, AB, Canada*
- Real-time image-based modeling and rendering for dynamic scenes
- 2006.04.28 *Department of Computer Science, Memorial Univ. St. John's, NL, Canada*
- A real-time GPU-based disparity flow estimation algorithm
- 2005.08.09 *Department of Computing Science, Univ. of Alberta. Edmonton, AB, Canada*
- Toward real-time marker-less motion tracking
- 2005.06.28 *Workshop on Computer Simulation & Virtual Reality Applications. Sudbury, ON, Canada*
- Analyze and synthesize dynamic scenes using programmable graphics hardware
- 2004.10.27 *Center for Visualization and Virtual Environment, Univ. of Kentucky. Lexington, KY, USA*
- 2004.08.18 *Microsoft Research Asia. Beijing, China*
- Toward interactive 3D movies and immersive tele-presence
- 2003.04.22 *Department of Math and Computer Science, Laurentian Univ. Sudbury, ON, Canada*
- 2003.04.02 *Department of Math and Computer Science, Univ. of Lethbridge. Lethbridge, AB, Canada*

- The rayset taxonomy and novel image-based rendering approaches
2003.03.27 *Visual Computing Seminar, Univ. of Alberta.* Edmonton, AB, Canada
- Multi-resolution genetic algorithm and its applications in computer vision
2002.09.25 *Visual Computing Seminar, Univ. of Alberta.* Edmonton, AB, Canada

TEACHING EXPERIENCES

University of Guelph

Graduate courses taught

- CIS*6890 Technical Communication and Research Methodology Winter 2024
- CIS*6320 Image Processing Algorithms and Applications Summer 2023
Winter 2022
- UNIV*6080 Computational Thinking for Artificial Intelligence Fall 2020
Fall 2023

Undergraduate courses taught

- CIS*1300 Programming Fall 2024

Memorial University

Graduate courses developed and taught

- COMP 690A/B Research Methods in Computer Science Fall 2018 -
Winter 2019
- COMP 6909 Fundamentals of Computer Graphics Winter 2016
- COMP 6784 General Computing on Graphics Hardware Spring 2014
Winter 2012
Fall 2010
Winter 2010
Winter 2008
Winter 2009

Other graduate courses taught

- COMP 6752 Applications of Computer Graphics Fall 2014
Winter 2014
Winter 2012

Undergraduate courses developed and taught

- COMP 4768 Software Development for Mobile Devices Winter 2014
Fall 2010
Fall 2009
- COMP 3301 Visual Computing and Applications Winter 2018

Other undergraduate courses taught

- COMP 4751 Computer Graphics Winter 2014
Winter 2012
Fall 2009
Fall 2008
Fall 2007

University of Alberta

Graduate courses cotaught

- CMPUT 605 Individual Study on Compressive Sensing in Computational Photography Fall 2014
- CMPUT 605 Individual Study on Underwater Computational Photography Fall 2009

Laurentian University

Undergraduate courses taught

- COSC 4306 Computer Graphics Fall 2006
Winter 2006
Fall 2004
Fall 2003
- COSC 4426 Topics in Computer Vision Winter 2007
Winter 2005
- COSC 4706 Directed Studies in Graphics Hardware Programming Fall 2006
Winter 2005
- COSC 4106 Analysis of Algorithms Fall 2005
- COSC 4456 Parallel Computing Winter 2004
- COSC 2947 Object Oriented Programming Using C++ Fall 2006
Fall 2005
Fall 2004
- COSC 2406 Assembly Language Programming Winter 2006
Winter 2005
Winter 2004
- COSC 2007 Data Structures II Winter 2007

University of Saskatchewan

Undergraduate courses taught

- CMPT 115 Principles of Computer Science Summer 2000
Summer 1999

STUDENT ADVISING

Current Graduate Students

- 2025.09 - Zihan Yang **Ph.D. candidate, Univ. of Guelph**
Recipient of “Ontario Graduate Scholarship”
- 2024.11 - Fatemeh Shirazi **Joint Ph.D. Training, Univ. of Guelph & Yazd Univ.**
- 2023.09 - Zhentao Huang **Ph.D. candidate, Univ. of Guelph**
Recipient of “Entrance Award of Excellence”
- 2021.09 - Yukun Shi **Ph.D. candidate, Univ. of Guelph**

Former Postdoctoral Fellows

- 2023.11 - Yande Li **Postdoctoral fellow, Univ. of Alberta (Co-supervisor: Dr. L. Cheng)**
2025.05
- 2019.11 - Sen Wang **Postdoctoral fellow, Univ. of Alberta (Co-supervisor: Dr. L. Cheng)**
2021.03
Present Position: Researcher, HoYoverse
- 2019.10 - Xinxin Zuo **Postdoctoral fellow, Univ. of Alberta (Co-supervisor: Dr. L. Cheng)**
2021.03
Present Position: Assistant Professor, Concordia University
- 2014.02 - Shibai Yin **Postdoctoral fellow, Memorial Univ.**
2014.06
Present Position: Associate Professor, Southwestern University of Finance and Economics
- 2013.09 - Yunhai Wang **Postdoctoral fellow, Memorial Univ.**
2014.10
Present Position: Professor, Shandong University

Former Doctorial Students

- 2021.09 - Yande Li **Joint Ph.D. Training, Univ. of Guelph & Lanzhou Univ.**
2022.12
Funded by China Scholarship Council
- 2017.09 - Mingjie Wang **Ph.D., Univ. of Guelph**
2022.08
Dissertation: Enhancing learning capability of Convolutional Neural Networks for fundamental vision problems
Recipient of “Dean’s Doctoral Award”
Present Position: Associate Professor, Zhejiang Sci-Tech University, China
- 2017.09 - Jun Zhou **Joint Ph.D. Training, Memorial Univ. & Dalian Univ. of Tech.**
2018.08
Funded by China Scholarship Council
Present Position: Associate Professor, Dalian Maritime University, China

- 2017.01 - 2020.12** **Mohamed Hamed Abdelpakey** **Ph.D., Memorial Univ. (Co-supervisor: Dr. M. Shehata)**
Dissertation: Visual object tracking in dynamic scenes
Thesis defense passed with distinction
- 2016.09 - 2022.05** **Xin Huang** **Ph.D., Memorial Univ.**
Dissertation: Deep neural networks for conditional visual synthesis
Recipient of “Chinese Government Scholarship” and “Fellow of the School of Graduate Studies”
Present Position: Assistant Professor, Zhejiang Sci-Tech University, China
- 2015.09 - 2022.08** **Hao Cai** **Ph.D., Memorial Univ.**
Dissertation: Blind image quality assessment: From heuristic-based to learning-based
Recipient of “Chinese Government Scholarship”
Present Position: Assistant Professor, St. Francis Xavier University
- 2015.09 - 2019.08** **Wendong Mao** **Ph.D., Memorial Univ.**
Dissertation: Learning-based stereo matching for 3D reconstruction
Recipient of “Dean’s Doctoral Award” and “Fellow of the School of Graduate Studies”
Present Position: Instructional Staff, Memorial University
- 2014.09 - 2018.11** **Yiming Qian** **Ph.D., Univ. of Alberta (Co-supervisor: Dr. Y.-H. Yang)**
Dissertation: Light transport acquisition and 3D reconstruction in the presence of light refraction
Winner of “Alberta Innovates Technology Futures Graduate Student Scholarship,” “PhD Early Achievement Award” and “Dean’s Excellence Award”
Present Position: Applied Scientist, Amazon
- 2014.09 - 2018.08** **Zili Yi** **Ph.D., Memorial Univ.**
Dissertation: From rule-based to learning-based image-conditional image generation
Thesis defense passed with distinction
Present Position: Associate Professor, Nanjing University
- 2012.09 - 2013.06** **Shibai Yin** **Joint Ph.D. Training, Memorial Univ. & Chang’an Univ.**
Funded by China Scholarship Council
- 2009.09 - 2013.05** **Grant Strong** **Ph.D., Memorial Univ.**
Dissertation: Arranging arbitrary data into structured layouts
Funded by Alexander Graham Bell Canada Graduate Scholarship

Former Master's Theses

- 2021.09 - **Zhentao Huang** M.Sc. thesis, Univ. of Guelph
2023.08 Thesis: Visibility-aware pixelwise view selection for multi-view stereo matching
- 2020.09 - **Zihan Yang** M.Sc. thesis, Univ. of Guelph
2023.04 Thesis: Reconstructing 3D shapes as a union of boxes from multi-view images
- 2016.01 - **Shiyao Wang** M.Sc. thesis, Memorial Univ. (Co-supervisor: Drs. O.
2017.08 Meruvia-Pastor & A. Smith)
Thesis: Augmented reality as a telemedicine platform for remote procedural training
- 2016.01 - **Xue Cui** M.Sc. thesis, Memorial Univ.
2017.05 Thesis: Lattice Boltzmann Method and vortex methods for fluid animation
- 2015.09 - **Farhad Kazemi** M.Sc. thesis, Memorial Univ. (Co-supervisor: Dr. W. Banzhaf)
2018.11 Thesis: Automatic high content screening using deep learning
- 2014.09 - **Zizui Chen** M.Sc. thesis, Memorial Univ. (Co-supervisor: Drs. M.
2017.11 Shehata, S. Czarnuch, & A. Smith)
Thesis: A computer vision based ultrasound operator skill evaluation
- 2014.09 - **Songyuan Ji** M.Sc. thesis, Memorial Univ. (Co-supervisor: Drs. Y. Chen &
2019.09 T. Hu)
Thesis: Deep learning for genome-wide association studies and the impact of SNP locations
- 2013.09 - **Hao Yuan** M.Sc. thesis, Memorial Univ. (Co-supervisor: Dr. J. Tang)
2015.12 Thesis: Self-tuning one-class support vector machines for data classification
Present Position: PhD student, Washington State Univ.
- 2012.09 - **Yiming Qian** M.Sc. thesis, Memorial Univ.
2014.08 Thesis: Labeling large scale social media data using budget-driven one-class SVM classification
- 2011.09 - **Timothy Yau** M.Sc. thesis, Univ. of Alberta (Co-supervisor: Dr. Y.-H. Yang)
2014.04 Thesis: Underwater camera calibration and 3D reconstruction
Funded by NSERC Postgraduate Scholarship
Recipient of "CS Outstanding MSc Thesis Award"
- 2010.01 - **Enamul Hoque** M.Sc. thesis, Memorial Univ. (Co-supervisor: Dr. O. Hoerber)
2012.02 Thesis: Concept-based query expansion and interactive visualization for web image search
Present Position: Associate Professor at York University

- 2009.01 - Jason Gedge M.Sc. thesis, Univ. of Alberta (Co-supervisor: Dr. Y.-H. Yang)
2011.07 Thesis: Underwater stereo matching and its calibration
Funded by NSERC Postgraduate Scholarship and iCORE Graduate Student
Scholarship in Information and Communications Technology
- 2008.09 - Jun Zheng M.Sc. thesis, Memorial Univ.
2010.11 Thesis: Real-time image registration and its app. in motion-visual hybrid controller
- 2007.09 - Grant Strong M.Sc. thesis, Memorial Univ.
2009.08 Thesis: Similarity-based image organization and browsing
Recipient of the “Fellow of the School of Graduate Studies” designation and the
“University Medal for Excellence in Graduate Studies”
- 2006.09 - Yilei Zhang M.Sc. thesis, Univ. of Alberta (Co-supervisor: Dr. Y.-H. Yang)
2008.09 Thesis: Towards real-time adaptive support weight stereo algorithms
Recipient of Alberta Ingenuity R&D Associates Award upon graduation

Former Master’s Projects

- 2015.01 - Liyao Deng M.Sc. project, Memorial Univ.
2015.04 Project: Real-time rigid body simulation on GPUs
- 2014.09 - Hemanth Billapati M.Sc. project, Memorial Univ.
2014.12 Project: LocationTracker: An Android app for location tracking and visualization
- 2014.05 - Naji Mahmoud M.Sc. project, Memorial Univ.
2014.08 Project: Visualizing user calling behavior on mobile devices
- 2014.05 - Peiwen Wang M.Sc. project, Memorial Univ.
2014.08 Project: An online user study tool for geo-related information retrieval
- 2014.05 - Sri Sudana M.Sc. project, Memorial Univ.
2014.08 Project: Real-time interactive fluid simulation on GPUs
- 2013.09 - Zequan Feng M.Sc. project, Memorial Univ.
2013.12 Project: An interactive interface for extracting foreground objects from videos
- 2012.05 - Guangyu Liu M.Engr. project, Memorial Univ.
2012.08 Project: Navigating in and interacting with virtual environments
- 2012.01 - Mustafa Bhuiyan M.Sc. project, Memorial Univ. (Co-supervisor: Dr. O. Hoeber)
2013.08 Project: Image search results organization based on metadata and visual features
- 2010.05 - Zhi Li M.Sc. project, Memorial Univ. (Co-supervisor: Dr. O. Hoeber)
2012.04 Project: Visualizing travel photos

2003.09 - Matthew Bardeggia B.Sc. final project, Laurentian Univ.
2003.12 Project: Non-photorealistic rendering with Cg

RESEARCH GRANTS AND FUNDING

Current Research Support

2023 - 2028 NSERC Individual Discovery Grants \$205,000
Five-year award at \$41,000 per year for a research program titled "Capture, analysis, and synthesis of visual contents."

Previous Research Support

2019 - 2024 University of Guelph Directorship Research Allowance \$100,000

2019 University of Guelph Start-up Fund \$50,000

2017 - 2023 NSERC Individual Discovery Grants \$156,000
Six-year award at \$26,000 per year for a research program titled "Quality-driven autonomous 3D reconstruction of large-scale scenes."

2019 - 2020 NSERC Research Tools and Instruments (with Drs. Bing Chen & Helen Zhang) \$146,243
Funded for an infrastructure application titled "vEER: A visualization platform for environmental emergency response decision support."

2018 - 2019 Innovation for Defence Excellence and Security Fund \$79,970
Subcontract for a project titled "Full motion video and still imagery tracking toolset."

2017 - 2019 NSERC Research Tools and Instruments (with Drs. Rodolphe Devillers, Mohamed S. Shehata, & George Mann) \$148,833
Funded for an infrastructure application titled "A UAV-based system for hybrid LiDAR and photogrammetry sensing."

2017 - 2019 Memorial University Headship Research Allowance \$60,000

2017 - 2018 Joint NSERC Engage/Mitacs Accelerate Program \$40,000
Support for collaboration with AltumView Systems Inc. on a project titled "Robust algorithms for real-world face recognition." Cash contribution from AltumView Systems Inc. (\$7,500) is included.

2017 - 2018 Harris Centre MMSB Waste Management Applied Research Fund \$11,400
Funded for a project titled "Vision-based pay-as-you-throw system."

2016 - 2018 Memorial University Multidisciplinary Fund \$10,000
Funded for a multidisciplinary project titled "Immersive telepresence for remote and rural health."

2012 - 2017	NSERC Individual Discovery Grants	\$110,000
	Five-year award at \$22,000 per year for a research program titled "Computer vision algorithms for live video processing using programmable graphics hardware."	
2014 - 2015	GRAND NCE Collaborative Network Investigator Award	\$7,377
	Funding for participation in a project titled "Data- and user-driven modelling of visual content."	
2007 - 2012	NSERC Individual Discovery Grants	\$100,000
	Five-year award at \$20,000 per year for a research program titled "Real-time dynamic scene modeling and rendering".	
2010 - 2011	Cupids 400 Project (with Drs. Yuanzhu Chen & Orland Hoerber)	\$34,033
2009 - 2011	RDC Industrial Research and Innovation Fund	\$50,000
	Funded for a project titled "Parallel computer vision algorithms for real-time processing on GPUs."	
2009	Springboard Patent & Legal Fund Awards	\$10,000
	Funded for a project titled "Real-time video matting for online background replacement". Institutional matching fund (\$2,250) is included.	
2007	Memorial University Start-up Fund	\$25,000
2004 - 2007	NSERC Individual Discovery Grants	\$42,000
	Three-year award at \$14,000 per year for a research program titled "Dynamic image-based scene modeling and rendering".	
2005 - 2006	CFI New Opportunities Fund	\$46,623
	Funded for an infrastructure project titled "A CPU/GPU cluster for scene analysis and synthesis". Matching funds from Ontario Innovation Trust (\$16,080) and business contribution (\$14,463) are included.	
2004 - 2006	CITO Research Partnerships Program (with Dr. Peter Kaiser)	\$170,000
	Business cash (\$30,000) and in-kind (\$64,000) contributions are included. This is a two-year program for supporting collaboration between science and engineering. The project is titled "Vision systems for underground support assessment".	
2005	Laurentian University Research Fund	\$2,800
2004 - 2005	NSERC Research Tools and Instruments	\$22,168
	Contribution from Laurentian University (\$2,500) is included. Funding is for setting up a multi-camera system that will be used in the "Dynamic image-based modeling and rendering" project.	
2004	Laurentian University Research Fund	\$2,025
2003	Laurentian University Start-up Fund	\$10,000