Yasutaka Furukawa

Associate Professor
School of Computing Science
Simon Fraser University
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Academic Career

Simon Fraser University 6/2019 - Present
Associate Professor

Simon Fraser University 8/2017 - 5/2019
Assistant Professor

Washington University in St. Louis 9/2013 - 7/2017
Assistant Professor

University of Washington 8/2008 - 12/2009
Research Associate
Supervisors: Steve Seitz, Brian Curless, and Richard Szeliski

University of Illinois at Urbana-Champaign 8/2002 - 5/2008
Ph.D. in computer science under the supervision of Jean Ponce

University of Tokyo 4/1997 - 3/2001
Bachelor of science in computer science under the supervision of Yoshihisa Shinagawa

Work Experience

Wayve Technologies Ltd. 3/2024 - Present
Principal Scientist

Google Inc. 1/2010 - 8/2013
Launched MapsGL (obliques) and Photo Tours

Industrial Light & Magic 5/2007 - 8/2007
Summer internship. Developed a facial motion capture system

Industrial Light & Magic 5/2006 - 9/2006
Summer internship. Developed ILM image-based modeling software, which won the 79th academy award (2007)

Honors and Awards

- **PAMI Longuet-Higgins Prize at CVPR** (2020)
- **CS-CAN: Outstanding Young CS Researcher Award** (2018)
- **NSF CAREER Award** (2015).
- **Best Student Paper Award,** European Conference on Computer Vision 2012.
- **2012 Excellent Paper by Google Research.**
- **Google Faculty Research Award** (2018, 2017, 2016)**.**
- **Azure Faculty Research Award** (2016)**.**
- **Best Paper Award**, 3DV 2013
- **Outstanding Reviewer Award**, International Conference on Computer Vision, 2009 and Computer Vision and Pattern Recognition 2021.
- **Conference Travel Grants**
  Computer Vision and Pattern Recognition 2007. European Conference on Computer Vision 2004 and 2006.
- **Scholarships from Heiwa Nakajima Foundation** (9/2002 - 8/2004)
- **ACM International Collegiate Programming Contest**
  Japan regional contest: 2nd place (2000) and 9th place (1999).
  Asia regional contest 7th place at KAIST (2000), 6th place at Tsukuba (2000) and 7th place at Kyoto (1999)

Funding

- Yasutaka Furukawa. Autodesk unrestricted research gift. 2024.4 - 2024.3. USD100,000.

- Yasutaka Furukawa. Meta unrestricted research gift. 2023.5 - 2024.4. USD75,000.

- Yasutaka Furukawa. Autodesk research grant. Controllable CAD Model Generation. 2023.3 - 2024.2. USD61,000.

- Yasutaka Furukawa: NSERC Discovery Grants. Solving Indoor Mapping and Navigation. 2018.4 - 2023.3. $240,000.

- Yasutaka Furukawa. Ricoh research grant. Extreme Indoor Floorplan Reconstruction. 2021.9 - 2022.8. $90,000.

- Yasutaka Furukawa with Autodesk Inc. NSERC Alliance Grants. Learning to design architecture. 2021.5-2023.4. $209,000.

- Yasutaka Furukawa. Canada Research Continuity Emergency Fund. 2021.3 - 2021.12. $52,951.

- Yasutaka Furukawa. NSERC COVID-19 Supplement. 2020.10 - 2021.3. $7,680.

- Yasutaka Furukawa and JiangChuan Liu. John R. Evans Leaders Fund. Next-generation Smart Building. 2021.1 - 2026.1. $385,558 (50%).

- Yasutaka Furukawa. Ricoh research grant. Learning to align panoramas. 2020.5 - 2021.4. $90,000.

- Yasutaka Furukawa: Lianjia (Ke Finance) research grant. Self-supervised Learning of Illumination Inference for Augmented Reality Applications. 2020.5 - 2022.4. USD100,000.

- Yasutaka Furukawa. Gift money. Autodesk. 2020.5 - 2020.12. USD40,000.

- Yasutaka Furukawa: GA technologies research grant. Construction-level floorplan inverse-CAD. 2019.12-2020.12. $62,500.

- Yasutaka Furukawa: Lianjia (Ke Finance) research grant. Floorplan++ -- Robust Floorplan Reconstruction from RGBD Panoramas. 2019.2 - 2020.1. USD100,000.

- Yasutaka Furukawa: DND/NSERC Discovery Grant Supplement. Solving Indoor Mapping and Navigation. 2018.8 - 2021.7. $120,000.

- Yasutaka Furukawa: NSERC Discovery Grants Program - Accelerator Supplements. Solving Indoor Mapping and Navigation. 2018.4 - 2021.3. $120,000.

- Yasutaka Furukawa: NSERC Discovery Grants. Solving Indoor Mapping and Navigation. 2018.4 - 2023.3. $240,000.

- Yasutaka Furukawa: Google Faculty Research Award. Automatic Floorplan Generation from Tango (year 2) (Host: Jurgen Sturm). 2018-2019. USD43,000.

- Yasutaka Furukawa: Renoworks industry gift funding. February 2018. $25,000.

- Yasutaka Furukawa (Tao Ju): Zillow industry sponsored fund. Indoor Mapping from Accidental Panorama with Gyroscope. January 2018. USD37,672.

- Yasutaka Furukawa: Gift fund, Adobe Systems Incorporated. 2017. USD15,000.

- Creation of Operationally Realistic 3D Environment (CORE3D), IARPA. 2018-2019. USD349,453.

- Yasutaka Furukawa: Google Faculty Research Award. Automatic Floorplan Generation from Tango (Host: Rahul Garg). 2017-2018. USD32,297.

- Yasutaka Furukawa: Microsoft Azure Research Award. Deep Indoor Mapping with Big Data. 2016. USD20,000.

- Yasutaka Furukawa: National Science Foundation. RI: Small: Functional Object Modeling (IIS 1618685). 06/01/16 - 05/31/19. USD488,868.

- Yasutaka Furukawa, Gary Skolnick, and Pirooz Eghtesady. SEAS CIG grant. 3D Echocardiography from 2D Ultrasound Images. 2016. USD25,000.

- Yasutaka Furukawa: Google Faculty Research Award. Transforming Panorama Images into Virtual Reality Assets (Host: Daniel Filip). 2016-2017. USD31,780.

- Yasutaka Furukawa: Zillow industry sponsored fund. Indoor Mapping from Accidental Panorama with Gyroscope Data. November 2015. USD68,081.

- Yasutaka Furukawa: National Science Foundation. CAREER: Structured Indoor Modeling (IIS 1540012), REU Supplement (IIS 1540012). Summer 2015. USD16,000.

- Yasutaka Furukawa: National Science Foundation. CAREER: Structured Indoor Modeling (IIS 1540012). 2/1/2015 - 1/31/2020. USD487,821.

Other Financial Supports

- Yasutaka Furukawa: NVIDIA Academic Hardware Grant. Fusing deep networks and multi-view 3D reconstruction, 2016.

Conference Papers

- Xiang Xu, Joseph G. Lambourne, Pradeep Kumar Jayaraman, Zhengqing Wang, Karl D.D. Willis, and Yasutaka Furukawa
  BrepGen: A B-rep Generative Diffusion Model with Structured Latent Geometry
  SIGGRAPH 2024.

- Jiacheng Chen, Yuefan Wu, Jiaqi Tan, Hang Ma, and Yasutaka Furukawa
  MapTracker: Tracking with Strided Memory Fusion for Consistent Vector HD Mapping
  European Conference on Computer Vision 2024 (oral).

- Shitao Tang, Jiacheng Chen, Dilin Wang, Chengzhou Tang, Fuyang Zhang, Yuchen Fan, Vikas Chandra, Yasutaka Furukawa, and Rakesh Ranjan
  MVDiffusion++: A Dense High-resolution Multi-view Diffusion Model for Single to Sparse-view 3D Object Reconstruction
  European Conference on Computer Vision 2024.

- Amin Shabani, Zhaowen Wang, Difan Liu, Nonxuan Zhao, Jimei Yang, and Yasutaka Furukawa
  Visual Layout Composer: Image-Vector Dual Diffusion Model for Design Layout Generation
  Computer Vision and Pattern Recognition 2024.

- Weilian Song, Jieliang Luo, Dale Zhao, Yan Fu, Chin-Yi Cheng, and Yasutaka Furukawa
  A-Scan2BIM: Assistive Scan To Building Information Modeling
  British Machine Vision Conference, 2023.

- Sepidehsadat Hosseini and Yasutaka Furukawa
  Floorplan Restoration by Structure Hallucinating Transformer Cascades
  British Machine Vision Conference, 2023.

- Shitao Tang, Fuyang Zhang, Jiacheng Chen, Peng Wang, and Yasutaka Furukawa
  MVDiffusion: Enabling Holistic Multi-view Image Generation with Correspondence-Aware Diffusion
  Conference on Neural Information Processing Systems, 2023.

- Sepidehsadat Hosseini, Mohammad Amin Shabani, Saghar Irandoust, and Yasutaka Furukawa
  PuzzleFusion: Unleashing the Power of Diffusion Models for Spatial Puzzle Solving
  Conference on Neural Information Processing Systems, 2023.

- Jiacheng Chen, Ruizhi Denge, and Yasutaka Furukawa
  PolyDiffuse: Polygonal Shape Reconstruction via Guided Set Diffusion Models
  Conference on Neural Information Processing Systems, 2023.

- Xiang Xu, Pradeep Kumar Jayaraman, Joseph George Lambourne, Karl D.D. Willis, and Yasutaka Furukawa
  Hierarchical Neural Coding for Controllable CAD Model Generation

International Conference on Machine Learning, 2023.

- Shitao Tang, Sicong Tang, Andrea Tagliasacchi, Ping Tan, and Yasutaka Furukawa
  NeuMap: Neural Coordinate Mapping by Auto-Transdecoder for Camera Localization
  Computer Vision and Pattern Recognition, 2023.

- Amin Shabani, Sepidehsadat Hosseini, and Yasutaka Furukawa
  HouseDiffusion: Vector Floorplan Generation via a Diffusion Model with Discrete and Continuous Denoising
  Computer Vision and Pattern Recognition, 2023.

- Ryuhei Hamaguchi, Yasutaka Furukawa, Masaki Onishi, and Ken Sakurada
  Hierarchical Neural Memory Network for Low Latency Event Processing
  Computer Vision and Pattern Recognition, 2023.

- Weilian Song, Mahsa Maleki Abyaneh, Mohammad Amin Shabani, and Yasutaka Furukawa
  Vectorizing Building Blueprints
  Asian Conference on Computer Vision 2022.

- Xiang Xu, Karl Willis, Joseph Lambourne, Chin-Yi Cheng, Pradeep Kumar Jayaraman, and Yasutaka Furukawa
  SkexGen: Generating CAD Construction Sequences by Autoregressive VAE with Disentangled Codebooks
  International Conference on Machine Learning 2022.

- Sachini Herath, David Caruso, Chen, Liu, Yufan Chen, and Yasutaka Furukawa
  Neural Inertial Localization
  Computer Vision and Pattern Recognition, 2022.

- Jiacheng Chen, Yiming Qian, and Yasutaka Furukawa
  HEAT: Holistic Edge Attention Transformer for Structured Reconstruction
  Computer Vision and Pattern Recognition, 2022.

- Yiming Qian, Hang Yan, Sachini Herath, Pyojin Kim, and Yasutaka Furukawa
  Single user WiFi Structure from Motion in the Wild
  International Conference on Robotics and Automation, 2022.

- Amin Shabani, Weilian Song, Hirochika Fujiki, Makoto Odamaki, and Yasutaka Furukawa
  Extreme Structure from Motion for Indoor Panoramas without Visual Overlaps

International Conference on Computer Vision 2021.

- Fuyang Zhang, Sam Xu, Nelson Nauata, and Yasutaka Furukawa
  Structured Outdoor Architecture Reconstruction by Exploration and Classification
  International Conference on Computer Vision 2021.

- Yiming Qian, Hao Zhang, and Yasutaka Furukawa
  Roof-GAN: Learning to Generate Roof Geometry and Relations for Residential Houses
  Computer Vision and Pattern Recognition 2021.

- Nelson Nauata, Sepidehsadat Hosseini, Kai-Hung Chang, Hang Chu, Chin-Yi Cheng, and Yasutaka Furukawa
  House-GAN++: Generative Adversarial Layout Refinement Networks
  Computer Vision and Pattern Recognition 2021.

- Ryuhei Hamaguchi, Yasutaka Furukawa, Masaki Onishi, and Ken Sakurada
  Heterogeneous Grid Convolution for Adaptive, Efficient, and Controllable Computation
  Computer Vision and Pattern Recognition 2021.

- Madhawa Vidanapathirana, Qirui Wu, Yasutaka Furukawa, Angel Chang, and Manolis Savva
  Plan2Scene: Converting Floorplans to 3D Scenes
  Computer Vision and Pattern Recognition 2021.

- Sachini Herath, Saghar Irandoust ,Bowen Chen, Yiming Qian, Pyojin Kim, and Yasutaka Furukawa
  Fusion-DHL: WiFi, IMU, and Floorplan Fusion for Dense History of Locations in Indoor Environments
  International Conference on Robotics and Automation, 2021.

- Nelson Nauata and Yasutaka Furukawa
  Vectorizing World Buildings: Planar Graph Reconstruction by Primitive Detection and Relationship Inference
  European Conference on Computer Vision 2020.

- Nelson Nauata, Kai-Hung Chang, Chin-Yi Cheng, Greg Mori, and Yasutaka Furukawa
  House-GAN: Relational Generative Adversarial Networks for Graph-constrained House Layout Generation
  European Conference on Computer Vision 2020 (oral).

- Yiming Qian and Yasutaka Furukawa
  Learning Inter-Plane Relations for Piecewise Planar Reconstruction

European Conference on Computer Vision 2020.

- Fuyang Zhang, Nelson Nauata, and Yasutaka Furukawa
  Conv-MPN: Convolutional Message Passing Neural Network for Structured Outdoor Architecture Reconstruction
  Computer Vision and Pattern Recognition, 2020.

- Huayi Zeng, Kevin Joseph, Adam Vest, and Yasutaka Furukawa
  Bundle Pooling for Polygonal Architecture Segmentation Problem
  Computer Vision and Pattern Recognition, 2020.

- Hang Yan, Sachini Herath, and Yasutaka Furukawa
  RoNIN: Robust Neural Inertial Navigation in the Wild
  International Conference on Robotics and Automation, 2020.

- Jiacheng Chen, Chen Liu, Jiaye Wu, and Yasutaka Furukawa
  Floor-SP: Inverse CAD for Floorplans by Sequential Room-wise Shortest Path
  International Conference on Computer Vision, 2019.

- Luwei Yang, Ziqian Bai, Chengzhou Tang, Honghua Li, Yasutaka Furukawa, and Ping Tan
  SANet: Scene Agnostic Network for Camera Localization
  International Conference on Computer Vision, 2019.

- Chen Liu, Kihwan Kim, Jinwei Gu, Yasutaka Furukawa, and Jan Kautz
  PlaneRCNN: 3D Plane Detection and Reconstruction from a Single Image
  Computer Vision and Pattern Recognition, 2019 (oral).

- Huayi Zeng and Yasutaka Furukawa
  Neural Procedural Reconstruction for Residential Buildings
  European Conference on Computer Vision, 2018.

- Hang Yan, Qi Shan, and Yasutaka Furukawa
  RIDI: Robust IMU Double Integration
  European Conference on Computer Vision, 2018.

- Chen Liu, Jiaye Yu, and Yasutaka Furukawa
  FloorNet: A Unified Framework for Floorplan Reconstruction from 3D Scans
  European Conference on Computer Vision, 2018.

- Chen Liu, Jimei Yang, Duygu Ceylan, Ersin Yumer, and Yasutaka Furukawa
  PlaneNet: Piece-wise Planar Reconstruction from a Single RGB Image

Computer Vision and Pattern Recognition, 2018 (spotlight).

- Luwei Yang, Feiton Tan, Ao Li, Zhaopeng Cui, Yasutaka Furukawa, and Ping Tan
  Polarimetric Dense Monocular SLAM
  Computer Vision and Pattern Recognition, 2018 (oral).

- Chen Liu, Jiajun Wu, Pushmeet Kohli, and Yasutaka Furukawa
  Raster-to-Vector: Revisiting Floorplan Transformation
  International Conference on Computer Vision, 2017.

- Hang Yan, Yebin Liu, and Yasutaka Furukawa
  Turning an urban scene video into a cinemagraph
  Computer Vision and Pattern Recognition 2017.

- Erik Wijmans and Yasutaka Furukawa
  Exploiting 2D Floorplan for Building-scale Panorama RGBD Alignment
  Computer Vision and Pattern Recognition 2017.

- Chen Liu, Pushmeet Kohli, and Yasutaka Furukawa
  Layered Scene Decomposition via the Occlusion-CRF
  Computer Vision and Pattern Recognition, 2016 (spotlight)

- Satoshi Ikehata, Hang Yan, and Yasutaka Furukawa
  Structured Indoor Modeling.
  International Conference on Computer Vision, 2015 (oral).

- Qi Shan, Changchang Wu, Brian Curless, Yasutaka Furukawa, Carlos Hernandez, and Steven M. Seitz
  Accurate Geo-registration by Ground-to-Aerial Image Matching.
  3DV 2014 (oral).

- Qi Shan, Brian Curless, Yasutaka Furukawa, Carlos Hernandez, and Steven M. Seitz
  Photo Uncrop.
  European Conference on Computer Vision, 2014.

- Ricardo Cabral and Yasutaka Furukawa
  Piecewise Planar and Compact Floorplan Reconstruction from Images.
  Computer Vision and Pattern Recognition, 2014.

- Qi Shan, Brian Curless, Yasutaka Furukawa, Carlos Hernandez, and Steven M. Seitz
  Occluding Contours for Multi-View Stereo.

Computer Vision and Pattern Recognition, 2014.

- Qi Shan, Riley Adams, Brian Curless, Yasutaka Furukawa, and Steven M. Seitz
  The Visual Turing Test for Scene Reconstruction.
  3DV 2013 (**Best Paper Award**).

- Jianxiong Xiao and Yasutaka Furukawa
  Reconstructing the World's Museums.
  European Conference on Computer Vision, 2012 (**Best Student Paper Award**).

- Avanish Kushal, Ben Self, Yasutaka Furukawa, David Gallup, Carlos Hernandez, Brian Curless, and Steve Seitz
  Photo Tours.
  3DimPVT 2012 (oral).

- Yasutaka Furukawa, Brian Curless, Steven M. Seitz and Richard Szeliski
  Towards Internet-scale Multi-view Stereo.
  Computer Vision and Pattern Recognition, 2010.

- Yasutaka Furukawa, Brian Curless, Steven M. Seitz and Richard Szeliski
  Reconstructing Building Interiors from Images.
  International Conference on Computer Vision, 2009 (oral).

- Yasutaka Furukawa and Jean Ponce
  Dense 3D Motion Capture for Human Faces.
  Computer Vision and Pattern Recognition, 2009.

- Yasutaka Furukawa, Brian Curless, Steven M. Seitz and Richard Szeliski
  Manhattan-world Stereo.
  Computer Vision and Pattern Recognition, 2009.

- Yasutaka Furukawa and Jean Ponce
  Accurate Camera Calibration from Multi-View Stereo and Bundle Adjustment.
  Computer Vision and Pattern Recognition, 2008.

- Yasutaka Furukawa and Jean Ponce
  Dense 3D Motion Capture from Synchronized Video Streams.
  Computer Vision and Pattern Recognition, 2008 (oral).

- Yasutaka Furukawa and Jean Ponce
  Accurate, Dense and Robust Multi-View Stereopsis.

Computer Vision and Pattern Recognition, 2007.

- Yasutaka Furukawa and Jean Ponce
  Carved Visual Hulls for Image-Based Modeling.
  European Conference on Computer Vision, 2006 (oral).

- Yasutaka Furukawa and Jean Ponce
  Structure and Motion from Images of Smooth Textureless Objects.
  European Conference on Computer Vision, 2004.

Journal Articles

- Yasutaka Furukawa and Carlos Hernandez
  Multi-View Stereo: A Tutorial.
  Foundations and Trends in Computer Graphics and Vision, 2015.

- Jianxiong Xiao and Yasutaka Furukawa
  Reconstructing the World's Museums.
  International Journal of Computer Vision, 2014.

- Sameer Agarwal, Yasutaka Furukawa, Noah Snavely, Brian Curless, Steven M. Seitz and Richard Szeliski
  Building Rome in a Day.
  Communications of the ACM, Vol. 54, No. 14, Pages 105-112, October 2011.

- Sameer Agarwal, Yasutaka Furukawa, Noah Snavely, Brian Curless, Steven M. Seitz and Richard Szeliski
  Reconstructing Rome.
  IEEE Computer Society, Vol. 43, No.6, Pages 40-47, June 2010.

- Yasutaka Furukawa and Jean Ponce
  Accurate, Dense and Robust Multi-View Stereopsis.
  IEEE Transactions on Pattern Analysis and Machine Intelligence, Vol. 32, Issue 8, Pages 1362-1376, August 2010.

- Yasutaka Furukawa and Jean Ponce
  Accurate Camera Calibration from Multi-View Stereo and Bundle Adjustment.
  International Journal of Computer Vision, Volume 84, Issue 3, Pages 257-268, September 2009.

- Yasutaka Furukawa and Jean Ponce
  Carved Visual Hulls for Image-Based Modeling.
  International Journal of Computer Vision, Volume 81, Issue 1, Pages 53-67, March 2008.
  Special Issue: Best of the European Conference on Computer Vision 2006.

- Svetlana Lazebnik, Yasutaka Furukawa and Jean Ponce
  Projective Visual Hulls.
  International Journal of Computer Vision, Volume 74, Issue 2, Pages 137-165, August 2007.

- Yasutaka Furukawa, Amit Sethi, Jean Ponce and David Kriegman
  Robust Structure and Motion from Outlines of Smooth Curved Surfaces.
  IEEE Transactions on Pattern Analysis and Machine Intelligence, Volume 28, Number 2, Pages 302-315, February 2006.

- Yasutaka Furukawa and Yoshihisa Shinagawa.
  Accurate and Robust Line Segment Extraction by Analyzing Distribution around Peaks in Hough Space.
  Computer Vision and Image Understanding, Volume 92, Issue 1, Pages 1-25, October 2003.

Textbook Chapters

- Yasutaka Furukawa and Jean Ponce
  Combining Multi-View Stereo and Bundle Adjustment for Accurate Camera Calibration.
  Image and Geometry Processing for 3D Cinematography, Springer.
  Editors: Remi Ronfard and Gabriel Taubin, 2010.

- Yasutaka Furukawa and Jean Ponce
  Dense 3D Motion Capture from Synchronized Video Streams
  Image and Geometry Processing for 3D Cinematography, Springer.
  Editors: Remi Ronfard and Gabriel Taubin, 2010.

Tutorials, Workshops, and Courses

- Computer Vision in the Built Environment
  Iro Armeni, Yasutaka Furukawa, Jaehoon Jung, Fuxin Li, Michael Olsen, and Yelda Turkan
  Computer Vision and Pattern Recognition, June 2022.

- Holistic Scene Structures for 3D Vision
  Zihan Zhou, Yasutaka Furukawa, Yi Ma, Shenghua Gao, Chen Liu, Yichao Zhou, Linjie Luo, Jia Zheng, Junfei Zhang, and Rui Tang
  European Conference on Computer Vision, August 2020.

- Holistic 3D Reconstruction: Learning to Reconstruct Holistic 3D Structures from Sensorial Data
  Zihan Zhou, Yasutaka Furukawa, and Yi Ma.
  International Conference on Computer Vision, October 2019.

- 3D reconstruction. From Sensing, Perception to Cognition.
  Yasutaka Furukawa
  Aitutorial Series by Aibee. Peking University, China, December 2018.

- 3D reconstruction with Priors.
  Yasutaka Furukawa
  International Computer Vision Summer School, Sicily, Italy, July 2014.

- State of the art 3D reconstruction techniques: Very large scale 3D reconstruction and the role of priors.
  Noah Snavely and Yasutaka Furukawa
  IEEE Conference on Computer Vision and Pattern Recognition, Columbus, USA, June 2014

- 3D shape Reconstruction from Photographs: a Multi-View Stereo Approach.
  Carlos Hernández, George Vogiatzis and Yasutaka Furukawa
  IEEE Conference on Computer Vision and Pattern Recognition, San Francisco, USA, June 2010

Conferences

- Campus-wide Indoor Mapping.
  Ashley Huhman and Yasutaka Furukawa.
  23rd annual Maryland Baltimore County McNair Scholars Research Conference, 2015

Professional Activities

Associate Editor	IEEE Transactions on Pattern Analysis and Machine Intelligence November 2019 - present
Associate Editor	International Journal of Computer Vision, Springer, December 2016 - 2023

Associate Editor	Computer Vision and Image Understanding, Elsevier, November 2013 - 2021
Associate Editor	Image and Vision Computing, May 2016 - 2021
Associate Editor	IPSJ Transactions on Computer Vision and Applications, March 2014 - 2021
Guest Editor	CVIU special issue on Large-Scale 3D Modeling of Urban Indoor or Outdoor Scenes from Images and Range Scans with Ioannis Stamos, Philippos Mordohai, Marc Pollefeys, and Long Quan. April 2017.
Area Chair	Computer Vision and Pattern Recognition, 2025, 2023, 2022, 2020, 2018, 2017 International Conference on Computer Vision, 2025, 2021, 2019, 2017, 2015 European Conference on Computer Vision, 2024, 2022, 2020 Conference on Neural Information Processing Systems, 2024, 2023 International Conference on Machine Learning, 2025 International Conference on 3D Vision, 2018, 2016, 2015 Asian Conference on Computer Vision, 2022, 2020, 2016, 2014
Program Chair	ICCV 2023 3DV 2017 3DV 2013 (the third joint 3Dim/3DPVT)
Tutorial Chair	3DV 2020
NSF Panel	Vision and Graphics panels (since 2014).
Reviewer	European Research Council Grants

External Affiliations

- Visiting Professor. National Institute of Informatics (NII). 2019, 2020, 2021, 2022, 2023, 2024.
- Visiting Professor. The Artificial Intelligence Research Center. National Institute of Advanced Industrial Science and Technology (AIST). 2018, 2019, 2020, 2021, 2022, 2023, 2024.

Presentations and Invited Talks

- Pushing the Frontiers of 3D Content Generation: Keynote at 1st Workshop on Urban Scene Modeling at CVPR, June 2024.
- Generation Meets Reconstruction: Keynote at Korean Conference on Computer Vision, August 2023.
- Generation Meets Reconstruction: Kyoto University, August 2023.
- Generation Meets Reconstruction: University of Tokyo, August 2023.

- Diffusion Models for Generation, Reconstruction, and Pose Estimation. Keynote speech at 1st International Workshop on Capturing, Interpreting & Visualizing Indoor Living Spaces at CVPR, June 2023.
- Teaching a computer to be an architect. Korea AI Summit, December 2022.
- Structured Architectural Modeling: Two Recent Discoveries. University of Tokyo, December 2022.
- Structured Architectural Modeling: Two Recent Discoveries. Tokyo Institute of Technology, December 2022.
- Teaching a computer to be an architect. UIUC, October 2022.
- Teaching a computer to be an architect. Keynote speech at International Conference on 3D Vision, September 2022.
- Teaching a computer to be an architect. Keynote speech at Amazon Computer Vision Conference, August 2022.
- Computational Motion Sensing. SFU AI4All event. July 2022.
- Extreme Panoramic Indoor Modeling. 3rd OmniCV workshop, CVPR. June 2022.
- Structured Architectural Geometry Generation. TU Delft university, April 2022.
- Structured Architectural Geometry Generation. UCSD, March 2022.
- Computational Motion Sensing, IlluminAIte (for highschool students), December 2021.
- Teaching computers to reconstruct, vectorize, and design floorplans. A keynote speech at the AI in Design workshop, National Institute for Artificial Intelligence in Construction, August 2021.
- Technical interview podcast on AI research work in Architecture Applications by Mayur Mahendrakumar. July 2021.
- Structured Geometry Reconstruction and Generation. NEC, July 2021.
- Teaching computers to design architecture. Invited talk at IMAGINE seminar, Ecole des Ponts ParisTech, July 2021.
- Teaching computers to design architecture. Keynote at the workshop on computer vision in the built environment at CVPR 2021.
- Teaching computers to design architecture. Huawei Noah's Ark Lab Canada Coffee Talk. May 2021.
- Structured Architectural Modeling. AI in Construction Webinar, University of Illinois at Urbana-Champaign. September 2020.
- Structured Architectural Modeling. Invited talk at Facebook Reality Lab. September 2020.
- CVPR is a contemporary art exhibition 1. ScanNet challenge workshop at CVPR 2020.
- CVPR is a contemporary art exhibition 2. 3D scene understanding workshop at CVPR 2020.
- Structured geometry modeling and computational motion sensing. Keynote at the 26th Symposium on Sensing via Image Information. June 2020.
- Structured Modeling: From geometric sensing to perception. IDR User Forum. National Institute of Informatics. November 2019.

- Computational Motion Sensing and Geometric Perception. University of Tokyo. July 2019.
- Computational Motion Sensing. International Conference on Predictive Vision. York University. June 2019. Invited talk.
- 3D Reconstruction: From Sensing, Perception, to Cognition. Peking University China, December 2018. Aitutorial series by Aibee.
- Anytime Anywhere Navigation and Structured Indoor Modeling. Rakuten Japan, July 2018.
- Structured Indoor Modeling. Sitsukan workshop Sapporo Japan, June 2018.
- Data-driven Inertial Navigation and Constrained Procedural Modeling. Microsoft Research Redmond, January 2018.
- Past, Current, and Future of 3D Modeling. VALSE online Webinar, November 2017.
- Data-driven Inertial Navigation and Constrained Procedural Modeling. Workshop on Computer Vision for VR, International Conference on Computer Vision, October 2017.
- Data-driven Inertial Navigation and Constrained Procedural Modeling. Microsoft Research Asia, October 2017.
- Data-driven Inertial Navigation and Constrained Procedural Modeling. Tsinghua University, October 2017.
- What levels of geometric priors do you need for 3D modeling? Keynote speech at International Workshop on Lines, Planes and Manhattan Models for 3-D Mapping, at IROS September, 2017.
- Indoor Scene Understanding and Dynamic Scene Modeling. University of Maryland, November, 2016.
- 3D Computer Vision: Success in the past and challenge in the future. NVIDIA, October 2016.
- 3D Computer Vision: Success in the past and challenge in the future. University of California Berkeley, September 2016.
- Deep Learning for SLAM? Asian Conference on Computer Vision, Area Chair Workshop, August 2016.
- Beyond the success of Multi-View Stereo. University of Tokyo, August 2016.
- Beyond the success of Multi-View Stereo. Shanghai Tech Symposium on Information Science and Technology, June 2016.
- Handling occlusions & Bridging the gap between single-view and multi-view techniques. ENS/Inria-Paris, May 2016.
- What is the meaning of obtaining a Ph.D.? & How should one model indoors?
  Tokyo Institute of Technology, Jan 2016.
- What is the meaning of obtaining a Ph.D.? & 3D Computer Vision
  University of Tokyo Jan 2016.
- Uncanny Valley for 3D Reconstruction
  Dagstuhl Seminar, Vision for Autonomous Vehicles and Probes, Dagstuhl, November 2015

- 3D Computer Vision
  Osaka University, August 2015
- 3D Computer Vision
  University of Tokyo, July 2015
- Structured Indoor Modeling and uncanny valley for 3D reconstruction
  ENS/INRIA-Paris, July 2015
- Uncanny valley for 3D reconstruction
  TTIC, Midwest Computer Vision Workshop, December 2014
- 3D Computer Vision
  Floored Inc., September 2014
- Uncanny valley for 3D reconstruction
  Nanyang Technological University, September 2014
- Reconstruct and visualize the world
  Amazon Inc., August 2013
- Multi-view 3D Reconstruction Techniques in Computer Vision
  CVIM Tutorial Series, Tsukuba University, November, 2011
- 3D Reconstruction and Visualization Techniques
  Institute of Industrial Science, University of Tokyo, Japan, May 2009
- 3D Reconstruction and Visualization Techniques
  Toppan Printing, Japan, May 2009
- 3D Reconstruction Technologies in Computer Vision
  ImageMovers Digital, California, USA, December 2008
- Accurate Camera Calibration from Multi-View Stereo and Bundle Adjustment
  BIRS 2008 Workshop on Multi-View Image and Geometry Processing for 3D Cinematography, Canada, July 2008
- Dense 3D Motion Capture from Synchronized Video Streams
  BIRS 2008 Workshop on Multi-View Image and Geometry Processing for 3D Cinematography, Canada, July 2008
- Combining Multi-View Stereo and Bundle Adjustment, 3D Dense Motion Capture
  University of Cambridge, UK, February 2008
- Combining Multi-View Stereo and Bundle Adjustment, 3D Dense Motion Capture
  CERTIS, Ecole Nationale des Ponts et Chaussees, France, February 2008
- High Fidelity Image-Based Modeling
  Advanced Industrial Science and Technology (AIST), JAPAN, December 2007
- High Fidelity Image-Based Modeling
  Microsoft Research Redmond, USA, August 2007
- High Fidelity Image-Based Modeling
  University of Washington, USA, August 2007
- High Fidelity Image-Based Modeling
  Google, USA, August 2007

- Accurate, Dense, and Robust Multi-View Stereopsis
  Industrial Light and Magic, USA, June 2007
- Multi-View Stereo through Feature Matching and Expansion
  BIRS 2006 Workshop on Mathematical Methods in Computer Vision, Canada, October 2006
- Carved Visual Hulls for High Accuracy Image-based Modeling
  Symposium on Computational Photography and Video (SCPV2005), USA, May 2005

Patents

- Yasutaka Furukawa, Carlos Hernandez Esteban, and Steven M. Seitz
  Providing an image tour of a point of interests.
  US Patent 20,150,332,494,2015.
- Yasutaka Furukawa and David Gallup
  Systems and methods for generating depthmaps.
  US Patent 9,087,408.
- Matthew Robert Simpson, Jonah Jones, Yasutaka Furukawa, Steven M. Seitz, and Andrew Ofstad
  Visual Transitions for Photo Tours Between Imagery in a 3D Space.
  US Patent 20,150,154,798,2015.
- Yasutaka Furukawa and Ricardo Cabral
  System and method for floorplan reconstruction and three-dimensional modeling.
  US Patent 9,025,861.
- Yasutaka Furukawa and Tarak Gandhi
  Depth map generation using multiple scanners to minimize parallax from panoramic stitched images.
  US Patent 9,013,543,2015.
- Yasutaka Furukawa and Jianxiong Xiao
  Systems and methods for preparing a model of an environment for display.
  US Patent 8.994,726.
- Yasutaka Furukawa, Steven M. Seitz, Jianxiong Xiaog, Carlos Hernandez Esteban, and David Gallup
  Systems and methods for generating a model of an environment.
  US Patent 8,994,725.
- Yasutaka Furukawa and Jean Ponce
  Match, expand, and filter technique for multi-view stereopsis.
  US Patent 8.331,615.
- Yasutaka Furukawa and Carlos Hernandez Esteban
  Systems and methods for generating a depth file.
  US Patent 8,260,007.

Teaching Experience

- Computer Vision (CMPT 412/762), Fall 2023, Simon Fraser University.
- Computer Vision (CMPT 412), Spring 2023, Simon Fraser University.
- Computer Vision (CMPT 762), Fall 2022, Simon Fraser University.
- Computer Vision (CMPT 762), Spring 2022, Simon Fraser University.
- Computer Vision (CMPT 412), Fall 2021, Simon Fraser University.
- Computer Vision (CMPT 762), Spring 2021, Simon Fraser University.
- Computer Vision (CMPT 412), Fall 2020. Simon Fraser University.
- Computer Vision (CMPT 762), Spring 2020. Simon Fraser University.
- Computer Vision (CMPT 762), Fall 2019. Simon Fraser University.
- Computer Vision (CMPT 412), Fall 2019. Simon Fraser University.
- Computer Vision (CMPT 822), Fall 2018. Simon Fraser University.
- Computational Photography (CMPT 469-888), Spring 2018. Simon Fraser University.
- New Vision: Designing for New Tools (ARCH 529), Spring 2015, Spring 2016. Washington University in St. Louis.
- Computer Graphics (CSE 452), Spring 2014, Spring 2016. Washington University in St. Louis.
- Computer Vision (CSE 559), Fall 2013, Spring 2015, Fall 2016. Washington University in St. Louis.
- Teaching Assistant for Combinatorial algorithms, 8/2002 - 5/2003. University of Illinois at Urbana Champaign.
- Guest lecture on number theory and primality testing, 3/2003. University of Illinois at Urbana Champaign.

Extra Activities

- Advisory board, Skydio (https://www.skydio.com/), 2020 - 2021.
- Consultant, GA-Technologies (https://www.ga-tech.co.jp/), 2020 - 2021.
- Principal research scientist, Zillow (http://www.zillow.com), 2015 - 2019.
- Advisory board, Floored (http://www.floored.com), 2013 - 2015

Students/Postdocs Advised or co-Advised

- Yuefan Wu (Ph.D.) at Simon Fraser University. 2023 - Current.
- Eric Wang (Ph.D.) at Simon Fraser University. 2024 - Current. (2023 Gap year)
- Shitao Tang (Ph.D.) at Simon Fraser University. 2022 - 2024.
- Jiacheng Chen (Ph.D.) at Simon Fraser University. 2021 - Current.
- Sam Xu (Master/Ph.D.) at Simon Fraser University. 2021 - 2024 (2021 Master).
- Sepid Hosseini (Ph.D.) at Simon Fraser University. 2020 - Current.
- JangHyeon Lee (Professional Master) at Simon Fraser University. 2022 - 2023.

- Saghar Irandoust (Master) at Simon Fraser University. 2020 - 2022.
- Weilian Song (Ph.D.) at Simon Fraser University. 2019 - 2024.
- Mohammad Amin Shabani (Ph.D.) at Simon Fraser University 2019 - Current.
- Fuyang Zhang (visiting/Master/Ph.D.) at Simon Fraser University. 2019 - Current (2021 Master).
- Yiming Qian (Postdoc) at Simon Fraser University. 2019 - 2021.
- Mahsa Abyaneh (Master) at Simon Fraser University. 2018 - 2021.
- Kevin Joseph (Master) at Simon Fraser University. 2019 - 2021.
- Pyojin Kim (Postdoc) at Simon Fraser University. 2019 - 2020.
- Bowen Chen (undergraduate) at Simon Fraser University. 2019 - 2020.
- Adam Patrick (Fulbright scholar) at Simon Fraser University. 2018 - 2019.
- Nelson Nauata (Ph.D.) at Simon Fraser University. 2018 - 2022.
- Jiacheng Chen (undergraduate) at Simon Fraser University. 2018 - 2019.
- Sachini Herath (Master/Ph.D.) at Simon Fraser University. 2018 - Current (2019 Master).
- Leo Li (undergraduate) at Simon Fraser University. 2017 - 2018.
- Jun Xu (Postdoc) at Simon Fraer University. 2019 - 2019.
- Charlie Wu (undergraduate) at Washington University in St. Louis. 2017 - 2019.
- Huayi Zeng (Ph.D.) at Washington University in St. Louis. 2016 - 2021.
- Ashley Huhman (summer REU program, 2015) at Washington University in St. Louis
- Erik Wijmans (summer REU program 2015 + undergraduate) at Washington University in St. Louis. 2015 - 2017.
- Patrick Sullivan (Master) at Washington University in St. Louis. 2016 - 2017.
- Hang Yan (Ph.D.) at Washington University in St. Louis. 2014 - 2019.
- Chen Liu (Ph.D.) at Washington University in St. Louis. 2014 - 2019.
- Satoshi Ikehata (Postdoc) at Washington University in St. Louis. 2014 - 2016.
- Jeanine Burke (undergraduate) at Washington University in St. Louis 2015 - 2016.
- Xinyi Gong (undergraduate) at Washington University in St. Louis 2015 - 2016.
- Moniqua Guo (undergraduate) at Washington University in St. Louis 2014 - 2015.
- Brian Choi (Master) at Washington University in St. Louis 2013 - 2014.
- Ricardo da Silveira Cabral (CMU) at Google (summer internship) 2012.
- Jianxiong Xiao (MIT) at Google (summer internship) 2011.

Thesis Committees

- Shengyi Qian (Ph.D. thesis defense), University of Michigan, July 2024.
- Tara Toufighi (Master defense), Simon Fraser University, Februrary 2024.
- Hanene Ben yedder (Ph.D. thesis defense), Simon Fraser University, September 2023.
- Zhiqin Chen (Ph.D. thesis defense), Simon Fraser University, June 2023.
- Megha Nawhal (Ph.D. thesis defense), Simon Fraser University, April 2023.
- Sanjay Haresh (Master defense), Simon Fraser University, March 2023.
- Zeshi Yang (Ph.D. thesis defense), Simon Fraser University, Februrary 2023.

- Luwei Yang (Ph.D. thesis defense), Simon Fraser University, January 2023.
- Raj Kataria (Ph.D. thesis defense), University of Illinois at Urbana Champaign, December 2022.
- Jamal Ahmed Rahim (Master thesis defense), Simon Fraser University, August, 2022.
- Yew Zi Jian (Ph.D. thesis defense), National University of Singapore, July, 2022.
- Ali Gholami (Master defense), Simon Fraser University, April, 2022.
- Lei Chen (Ph.D. thesis defense), Simon Fraser University, January, 2022.
- Jiaqi Tan (Master defense), Simon Fraser University, January, 2022.
- Lei Chen (Ph.D. thesis proposal), Simon Fraser University, November, 2021.
- Feitong Tan (Ph.D. thesis proposal), Simon Fraser University, September, 2021.
- Raj Kataria (Ph.D. thesis proposal), University of Illinois at Urbana-Champaign, July, 2021.
- Santiago Cortes Reina (Ph.D. dissertation examination), Aalto University School of Science, January, 2021.
- Yizhao Zhou (Ph.D. thesis defense), University of California Berkeley, December, 2020.
- Armon Shariati (Ph.D. thesis defense), University of Pennsylvania, April, 2020.
- Jean-Philippe Bauchet (Ph.D. thesis defense), INRIA Sophia Antipolis, 12.2019.
- Saeid Asgari (Ph.D. thesis defense), Simon Fraser University, 11.2019.
- Chiyon Cho (Ph.D. thesis proposal), Carnegie Mellon University, 11.2019.
- Vincent Leroy (Ph.D. thesis defense), INRIA Rhone-Alpes, 10.2019.
- Yu Gong (Master defense), Simon Fraser University, 8.2019.
- Ruizhi Deng (Master defense), Simon Fraser University, 6.2019.
- Kelvin Cheng (Master defense), Simon Fraser University, 5.2019.
- Faraz Shamshirdar (Master defense), Simon Fraser University, 5.2019.
- Bita Azari (Master defense), Simon Fraser University, 5.2019.
- Armon Shariati (PhD. thesis proposal), University of Pennsylvania, 5.2019.
- Bita Azari (Master defense), Simon Fraser University, 4.2019.
- Renjiao Yi (Ph.D. defense), Simon Fraser University, 2.2019.
- Yifang Fu (Master defense), Simon Fraser University, 12.2018.
- Tolga Birdal (Ph.D. defense), Technishe Universitat Munchen, 12.2018.
- Rakesh Shrestha (Master defense), Simon Fraser University, 12.2018.
- Pratik Gujjar (Master defense), Simon Fraser University, 11.2018.
- Yiming Qian (Ph.D. thesis defense), University of Alberta, 11.2018.
- Renjiao Yi (Master depth exam), Simon Fraser University, 09.2018.
- Luwei Yang (Master defense), Simon Fraser University, 05.2018.
- Nelson Nauata (Master defense), Simon Fraser University, 04.2018.
- Sepehr MohaimenianPour (Master defense), Simon Fraser University, 04.2018.
- Qianggong Zhang (Ph.D. thesis defense), The University of Adelaide, 04.2018.
- Silvano Galliani (Ph.D. thesis defense), ETH Zurich, 12.2017.
- Hang Dou (Ph.D. thesis defense), Washington University in St. Louis, 5.2017.

- Yajie Yan (Ph.D. thesis proposal), Washington University in St. Louis, 5.2017.
- Abby Stylianou (Master defense), Washington University in St. Louis, 12.2016.
- Tara Salman (Ph.D. oral qualifying exam), Washington University in St. Louis, 12. 2016.
- Zhiyang Huang (Ph.D. oral qualifying exam), Washington University in St. Louis, 11, 2016.
- Missael Garcia (Ph.D. thesis proposal), Washington University in St. Louis, 11, 2016.
- Michelle Holloway (Ph.D. thesis defense), Washington University in St. Louis, 11, 2016.
- Yajie Yan (Ph.D. oral qualifying exam), Washington University in St. Louis, 2016.
- Ming Zou (Ph.D. thesis defense), Washington University in St. Louis, 4, 2016.
- Wenlin Chen (Ph.D. thesis defense), Washington University in St. Louis, 4. 2016.
- Yujie He (Ph.D. oral qualifying exam), Washington University in St. Louis, 2016.
- Wesley Chen (Ph.D. thesis defense), University of Tokyo, 2016.
- Michelle Holloway (Ph.D. thesis proposal), Washington University in St. Louis, 2015.
- Hang Dou (Ph.D. oral qualifying exam), Washington University in St. Louis, 2015.
- Ian Schillebeeckx (Ph.D. thesis proposal), Washington University in St. Louis, 2015.
- Ming Zou (Ph.D. thesis proposal), Washington University in St. Louis, 2015.
- Daniel Herrera (Ph.D. remote thesis committee), University of Oulu, 2015.
- Eddie Xu (Ph.D. thesis defense), Washington University in St. Louis, 2014.
- Shaurya Ahuja (Ph.D. oral qualifying exam), Washington University in St. Louis, 2014.
- Allen Lavoie (Ph.D. oral qualifying exam), Washington University in St. Louis, 2014.
- Wenlin Chen (Ph.D. oral qualifying exam), Washington University in St. Louis, 2013.
- Ming Zou (Master defense), Washington University in St. Louis, 2013.