

Peter Wonka

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EDUCATION

- **Vienna University of Technology** Vienna, Austria
Ph.D in Computer Science (Dr. techn.) Oct 1997 – Jun 2001
- **Vienna University of Technology** Vienna, Austria
Master of Science in Urban Planning (Dipl.-Ing.) Oct 1995 – Oct 2002
- **Vienna University of Technology** Vienna, Austria
Master of Science in Computer Science (Dipl.-Ing.) Oct 1993 – Jun 1997

APPOINTMENTS

- Professor, KAUST, KSA Jul 2014 – current
- Interims Director, Visual Computing Center (VCC) Nov 2021 – current
- Associate Director, Visual Computing Center (VCC, previously GMSV) Jan 2013 – Nov 2021
- Computer Science Program Chair, KAUST Sep 2018 – Dec 2021
- Acting Director of the GMSV center, KAUST Nov 2013 – Jan 2014
- Associate Professor, KAUST, KSA Aug 2011 – Jul 2014
- Associate Professor, Arizona State University, USA Aug 2010 – Aug 2016
- Assistant Professor, Arizona State University, USA Aug 2004 – May 2010
- Postdoctoral Researcher, Georgia Institute of Technology, USA Aug 2002 – Aug 2004
- Research Assistant, Vienna University of Technology, Austria Oct 1997 – Aug 2002
- Research Assistant, UJF Grenoble (iMAGIS - GRAVIR/IMAG, INRIA), France Jun 2000 – Jan 2001
- Lecturer, Fachhochschule Hagenberg, Austria Mar 2000 – Jun 2000
- Lecturer, Fachhochschule Hagenberg, Austria Mar 1999 – Jun 1999
- Research Assistant, University of Rennes I, France Sep 1998 – Jan 1999

AWARDS AND STIPENDS

- 2019: SGP best paper award
honorable mention
- 2015: CAD / Graphics best paper award (three awards given)
- 2014: Eurographics best paper award
(honorable mention – one best paper award and two honorable mention given in total)
- 2011: Eurographics best paper award (2nd place)
- 2006: NSF CAREER Award
- 2006: Best Proposal Award for GAMEWORLD
- 2006: VAST best paper award (2nd place)
(Eurographics Symposium on Virtual Reality, Archaeology and Cultural Heritage)
- 2001: Eurographics best paper award (Günther Enderle Award for the best paper)
The same paper also received the best student paper award

CONFERENCE ACTIVITIES - PROGRAM COMMITTEE MEMBER

- ACM Siggraph: 2009, 2010, 2015
- ACM Siggraph Asia: 2011, 2014, 2020, 2022
- IEEE Visualization: 2009, 2010, 2011
- Eurographics: 2012, 2014, 2015, 2017, 2018
- Eurographics Symposium on Rendering: 2003, 2007, 2008
- Eurographics Symposium on Geometry Processing: 2016, 2017, 2018, 2019
- ACM Symposium on Interactive 3D Graphics: 2007, 2008, 2009, 2010, 2011, 2012, 2013
- IEEE Symposium of Interactive Ray Tracing: 2007, 2008
- Eurographics Short Paper: 2007
- Pacific Graphics: 2004
- Shape Modeling International: 2011, 2012, 2013, 2014, 2016
- AAG: 2014, 2016, 2018
- CAD Graphics: 2015, 2016, 2017
- Indoor 3D: 2019
- JURSE: 2019, 2022

CONFERENCE ACTIVITIES - ORGANIZATION

- Pacific Graphics, Papers Chair, 2014
- IEEE Symposium of Interactive Ray Tracing, Treasurer, 2008

CONFERENCE ACTIVITIES - REVIEWING

- ACM Siggraph
- ACM Siggraph Asia
- ACM Siggraph Symposium on Interactive 3D Graphics
- IEEE Visualization
- IEEE Virtual Reality
- IEEE Symposium on Interactive Ray Tracing
- Eurographics
- Eurographics Workshop on Rendering
- Eurographics Workshop on Virtual Environments
- Eurographics Workshop on Computational Aesthetics
- Joint Eurographics- IEEE TCVG Symposium on Visualization
- Virtual Reality Modeling Language Symposium
- AAPR conference
- Summer Conference on Computer Graphics (Bratislava, Slovakia)
- Shape Modeling International
- Winter School on Computer Graphics (Plzen, Czech Republic)
- Pacific Graphics
- Graphics Interface
- IEEE Conference on Computer Vision and Pattern Recognition (CVPR)
- IEEE International Conference on Computer Vision (ICCV)
- European Conference on Computer Vision (ECCV)
- International Conference on Learning Representations (ICLR)

JOURNAL GUEST EDITOR

- Computers and Graphics, 2010
- IEEE Computer Graphics & Applications, 2008

JOURNAL EDITORIAL BOARD

- ACM Transactions on Graphics, 2013 – 2018
- IEEE Computer Graphics & Applications, 2016 – 2019
- IEEE Transactions on Visualization and Computer Graphics, 2016 – 2019
- Computer Graphics Forum, 2010 – 2013

JOURNAL REFEREE SERVICE

- IEEE Transactions on Visualization and Computer Graphics
- ACM Transactions on Graphics
- IEEE PAMI
- Computer Graphics Forum
- IEEE Computer Graphics & Applications
- Visual Computer
- International Journal of Computers and Application
- Graphical Models
- Computers and Graphics
- Geoscience and Remote Sensing Letters
- IEEE Transactions on Computational Intelligence and AI in Games

PROPOSAL REVIEWER SERVICE

- National Science Foundation, USA
- Ireland, Hong Kong, Israel, Czech Republic, France, Austria
- Thompson Publishing

DEPARTMENT COMMITTEE SERVICE ASU

- Graduate Admissions Committee 2004, 2005, 2006, 2007
- Computing Resources Committee 2007, 2008
- Faculty Hiring Committee 2008 (chair), 2009, 2010, 2011
- College Hiring Committee 2009, 2010
- Graduate Program Committee 2009, 2010, 2011
- Personnel Committee 2010, 2011
- Informatics Committee 2010, 2011

DEPARTMENT COMMITTEE SERVICE KAUST

- Graduate Admissions Committee 2011 (chair), 2012, 2013, 2014 (chair), 2015 (chair), 2016 (chair), 2017 (chair)
- Recruiting Committee 2013, 2014, 2015 (chair), 2016 (chair), 2017, 2022
- Curriculum Committee 2014, 2015
- Communications Committee 2021, 2022

UNIVERSITY COMMITTEE SERVICE KAUST

- Academic Council 2011, 2012

LOCAL PROFESSIONAL COMMITTEES

- Intel Science Fair 2005

INVITED KEYNOTE PRESENTATIONS

1. ICCV Workshop on Holistic Structure for 3D Vision (online), “Constraints in Urban Modeling”, September 2021
2. ICVGIP, Hyderabad, “Generative Models for Urban Design”, December 2018
3. J-FIG, Poitiers, “Computational Urban Design”, November 2018
4. JURSE, Dubai, “Encoding Prior Knowledge for Urban Reconstruction”, March 2017
5. Pacific Graphics, Beijing, “Computational Design of Urban Layouts”, October 2015

INVITED PRESENTATIONS

1. UCL Seminar (online), “Recent Research Efforts for Building 3D GANs”, September 2022
2. 3DGV Seminar (online), “Modeling of Urban Environments”, October 2021
3. ByteDance Seminar (online), “Recent Topics in Generative Modeling”, April 2021
4. Adobe Seminar (online), “10 Questions about Generative Modeling”, April 2021
5. National Tsing Hua University Taiwan, “Selected Research Challenges to Improve Generative Adversarial Networks”, May 2019
6. National Taiwan University, “Selected Research Challenges to Improve Generative Adversarial Networks”, May 2019
7. National Sun Yat-sen University Taiwan, “Selected Research Challenges to Improve Generative Adversarial Networks”, May 2019
8. Allegorithmic, “Computing Facade Layouts”, November 2018
9. Oxford, “Computational Urban Design”, July 2018
10. TU Darmstadt, “Integer Programming for Layout Problems”, June 2017
11. MPI Saarbrücken, “Integer Programming for Layout Problems”, June 2017
12. TU Munich, “Integer Programming for Layout Problems”, June 2017
13. UCL London, “Integer Programming for Layout Computations”, September 2016
14. TU Vienna, “Integer Programming for Layout Computations”, June 2016
15. IST Austria, “Exploring Quadrangulations”, July 2015
16. Ecole Polytechnique Paris, “Mesh Connectivity Editing for Modeling Applications”, June 2015
17. TU Vienna, “Computational Design of Urban Layouts”, November 2014
18. Ewha Womens University, “Mesh Connectivity Editing for Modeling Applications”, October 2014
19. UBC Vancouver, “Design Computation for Urban Layouts”, August 2014
20. IST Austria, “Design Computation for Urban Layouts”, July 2014
21. University of Hong Kong, “Modeling of Street Layouts, Mass Models, and Facades”, November 2013
22. UCL London, “Modeling of Street Layouts, Mass Models, and Facades”, June 2013
23. Tsinghua University, “Connectivity Editing for Polygonal Meshes”, November 2012
24. Microsoft Research Asia, “Recent Work in Urban and Architectural Modeling”, November 2012
25. SIAT. “Architectural Modeling and Reconstruction”, November 2012
26. TU Graz, “Recent Work in Urban and Architectural Modeling”, June 2012
27. TU Vienna, “Interactive Modeling with Procedural Extrusions”, June 2012
28. IST Austria, “Connectivity Editing of Irregular Vertices”, August 2011
29. Purdue, “Procedural Modeling of Patterns on Surfaces”, October 2010
30. KAUST, “Modeling and Visualization of Urban Environments”, September 2010
31. University of Utah, “Modeling and Visualization of Urban Environments”, June 2010
32. Navteq, Chicago “Modeling and Visualization of Urban Environments”, May 2010
33. Lawrence Livermore National Laboratory, “Remote Sensing Research at PRISM”, December 2008
34. University of Girona, “Procedural Modeling of Urban Environments”, July 2008
35. VRVIS Vienna, “Modeling of Urban Environments”, June 2008
36. Technical University of Vienna, “Computer Graphics Education for Graduate Students”, June 2008
37. Google Research, California, “Urban Reconstruction and Modeling for Building Virtual Worlds”, March 2008

38. University of Utah, “Modeling and Visualization of Urban Environments”, November 2007
39. Oregon State University, February 2007
40. Valve, Seattle, October 2006
41. Universitaet Stuttgart, September 2006
42. Intel Research, Santa Clara, February 2006
43. Eidgenössische Technische Hochschule Zürich (ETH), July 2005
44. Eidgenössische Technische Hochschule Zürich (ETH), June 2004
45. Simon Frasier University, April 2004
46. Arizona State University, April 2004
47. Stony Brook University, March, 2004
48. University College London, England, June 2002
49. Graz University of Technology, Graz, Austria, May 2001
50. Karlava University of Prague, Prague, Czech Republic, April 2001
51. iMAGIS seminar, Grenoble, France, March 2000
52. University of Rennes I, Rennes, France, January 1999

TEACHING

- Deep Learning for Visual Computing (CS 399), KAUST, Fall 2019, Fall 2020
- Computer Graphics (CS 248), KAUST, Fall 2011, Fall 2012, Fall 2013, Fall 2014, Fall 2015, Fall 2016, Fall 2017
- Geometry Processing (CS 272), KAUST, Spring 2012, Spring 2013, Spring 2015, Spring 2016, Spring 2017, Spring 2018
- Graphics for Games (CPI411), Arizona State University, Spring 2009, Spring 2010, Spring 2011
- Introduction to Computer Graphics (CSE 470), Arizona State University, Fall 2005, Fall 2006, Fall 2007, Fall 2009, Fall 2010
- Real-time Rendering (CSE 591), Arizona State University, Spring 2005, Spring 2007, Spring 2008, Fall 2009
- Introduction to ASU (ASU 101), Arizona State University, Fall 2008
- Advanced Computer Graphics (CSE 570), Arizona State University, Spring 2006, Spring 2008
- Introduction to Theoretical Computer Science (CSE355), Arizona State University, Spring 2005
- Multi-media Programming (MMP6), Fachhochschule Hagenberg, Spring 1999, Spring 2000

COURSES AT CONFERENCES AND WORKSHOPS

- **Integer Programming for Visual Computing**
Peter Wonka, Chi-han Peng
Course at ACM Siggraph Asia 2020
- **Integer Programming for Visual Computing**
Peter Wonka, Chi-han Peng
Course at ACM Siggraph Asia 2018
- **Practical Grammar-based Procedural Modeling of Architecture**
Michael Schwarz, Peter Wonka
Course at ACM Siggraph Asia 2015
- **A Survey of Urban Reconstruction**
Przemyslaw Musialski, Peter Wonka, Daniel G. Aliaga, Michael Wimmer, Luc van Gool, Werner Purgathofer
State of the Art Report at Eurographics 2012
- **Modeling 3D Urban Spaces Using Procedural and Simulation-Based Techniques**
Peter Wonka, Daniel Aliaga, Pascal Müller, Carlos Vanegas, Michael Frederickson
Course at ACM Siggraph 2011
- **Modeling the Appearance and Behavior of Urban Spaces**
Carlos Vanegas, Daniel G. Aliaga, Pascal Müller, Paul Waddell, Ben Watson, Peter Wonka
State of the Art Report at Eurographics 2009
- **Urban Design and Procedural Modeling.**
B. Watson, P. Müller, P. Wonka, A. Fuller
Course at ACM Siggraph 2007.
- **Procedural Modeling of Urban Environments**
Peter Wonka, Ben Watson, Pascal Mueller, Eric Haines
Course at ACM Siggraph 2006

CURRENT PROJECTS

- **Synthetic Data Generation Enabling the Automatic Early Detection of Plant Pests and Diseases**
Dominik Michels (PI), Peter Wonka, Mark Tester, Wojciech Pałubicki
KAUST Competitive Research Grant, 2022 – 2025, 3yrs, 1050K, KAUST
- **TEM 3D Alignment and Tomographic Reconstruction for Non-Rigid Samples**
Wolfgang Heidrich (PI), Peter Wonka, Stefan Arold
KAUST Competitive Research Grant, 2021 – 2024, 3yrs, 831K, KAUST

COMPLETED PROJECTS

Note: The percentages indicate the allocated recognition for each project as tracked by ASU.

- **Procedural Urban Modeling using Neural Networks**
Peter Wonka (PI), Bernard Ghanem
KAUST Competitive Research Grant, 2019 – 2021, 2yrs, 399K, KAUST
- **Analyzing Large Scale 3D Shape Collections**
Peter Wonka (PI), Maks Ovjanikov, Peter Richtarik
KAUST Competitive Research Grant, 2018 – 2021, 3yrs, 975K, KAUST
- **CCF: Visual Computer Center**
Wolfgang Heidrich (PI), Ghanem, Hadwiger, Wonka, Sundaramoorthi
KAUST Research Grants, 2015 – 2020. 5 yrs. 10M, KAUST
- **Urban Image Analysis for Urban Modeling**
Peter Wonka (PI), Ganesh Sundaramoorthi
KAUST Competitive Research Grant, 2015 – 2018. 3 yrs. 677K, KAUST
- **3D Modeling using Multi-Sided Patches**
Peter Wonka (PI), Alyn Rockwood, Tamas Varadi
Boeing Company. 2013 – 2015. 3yrs. 550K, KAUST
- **CAREER: Constrained Procedural Urban Modeling.**
Peter Wonka (PI, 100%),
NSF. 2007 – 2014. 5 yrs (extended). 400K, ASU
- **Multi-source Visual Analytics**
Jieping Ye, Peter Wonka (Co-PI 25%), Anshuman Razdan
NSF. 2009 – 2014, 3yrs. 500K, ASU
- **HCC: Small: Collaborative Research: Graph and Pattern Design on Surfaces**
Eugene Zhang, OSU and Peter Wonka, ASU
NSF. 2008 – 2013. 3 yrs. 250K, ASU
- **CPA-G&V: Tensor Factory**
Peter Wonka (PI, 50%), Jieping Ye (Co-PI)
NSF. 2008 – 2011. 3 yrs. 299K
- **Aerospace and Defense Initiative**
Rick Shangraw et al. (Peter Wonka Co-PI 7%)
SFAZ. 2010 – 2011, 1yr, 1M, ASU
- **Geospecific Displacement Maps for Real Time, Stereoscopic Training Simulation**
Anshuman Razdan, Peter Wonka (Co-PI 50%), John Femiani
SBIR Phase 1. 2010 – 2011, 6 months. 50K, ASU + STRC
- **Pilot: SOUZOU – Creativity through Procedural Modeling**
Yoshihiro Kobayashi (PI), Peter Wonka (Co-PI, 50%)
NSF. 2008 – 2011. 2+1 yrs. 199K
- **Gameworld.**
Michael Wimmer(PI), Peter Wonka(Co-PI, 100K Euro subcontract), Harald Riegler (Co-PI)
FIT-IT. 2007 – 2010. 3 yrs. 500K Euro
- **Integrated Spectral Dimensionality Reduction.**
Jieping Ye (PI), Peter Wonka (Co-PI, 25%), Anshuman Razdan (Co-PI)
NGA. 2008 – 2010. 2 yrs. 300K
- **Visual Geo-Analytics**
Peter Wonka (PI, 50%), Anshuman Razdan (Co-PI), Elisabeth Wentz (Co-PI)
NSF. 2006 – 2010. 3 yrs. 623K

- **Innovative 2D/3D Building, Asset, and Resource Tracking Visualization Tool.**
Kutta Consultion (PI), A. Razdan (Co-PI), Peter Wonka (Co-PI, 20%)
SBIR. 2007 – 2010. 2.5 yrs. Phase I 100K + Phase II 450K.
- **Procedural Details**
Peter Wonka (PI, 80%), Jieping Ye (Co-PI)
NVIDIA. 2008. 6 months. 2008. 25K
- **Interactive Procedural Urban Reconstruction from Aerial Images**
Peter Wonka (PI 100%).
Google. 2008. 40K
- **Geometry-based Feature Extraction and Analysis for Geospatial Datasets**
Anshuman Razdan (PI), Peter Wonka (Co-PI, 50%)
NGA. 2005 – 2008. 3 yrs. 450K
- **Image-based Simplification for 3D GIS.**
Peter Wonka (PI)
2002 – 2004, Austrian Science Fund (FWF), 70K Euro

ADVISORS

- Dieter Schmalstieg (TU Graz), PhD advisor
- Michael Gervautz (Qualcomm), PhD advisor
- William Ribarsky (UNC-C), postdoctoral advisor

MASTERS THESIS AWARDED

- Ahmed Abdelreheem (MS), KAUST, graduated 2022, first employment: PhD student at KAUST
- Shariq Farooq (MS), KAUST, graduated 2021, first employment: PhD student at KAUST
- Rameen Abdal (MS), KAUST, graduated 2020, first employment: PhD student at KAUST
- Wamiq Reyaz (MS), KAUST, graduated 2019, first employment: PhD student at KAUST
- Pheihao Zhu (MS), KAUST, graduated 2019, first employment: PhD student at KAUST
- Tian Ju (MS), KAUST, graduated 2018, first employment: PhD student at KAUST
- Yazeed AlHarbi (MS), KAUST, graduated 2018, first employment: PhD student at KAUST
- Sahar A Aseeri (MS), KAUST, graduated 2013, first employment: PhD student at U of Minnesota
- Mohamed Ibrahim (MS), KAUST, graduated 2012, first employment: PhD student at KAUST
- Yuanyuan Li (MS), ASU, graduated 2010
- Ji Liu (MS), ASU, graduated 2010, first employment: PhD student at University of Wisconsin
- Kaichi Zhou (MS), ASU, graduated 2008, first employment: NVIDIA
- Deepali Bhagvat (MS), ASU, graduated 2008, first employment: Microsoft
- Saif Ali (MS), ASU, graduated 2007, first employment: AMD

DOCTORAL DISSERTATIONS AWARDED

- Yazeed Alharbi, KAUST, graduated Summer 2021, first employment: SDAIA, Saudi Arabia
- Jing Ren, KAUST, graduated Summer 2021, first employment: post-doc at ETH Zuerich
- Guangming Zang (PhD), KAUST, graduated January 2020, co-chair Wolfgang Heidrich, first employment: KAUST research engineer
- Lama Affara (PhD), KAUST, first employment: assistant professor at Beirut Araba University
- Caigui Jiang, graduated June 2016, co-chair Helmut Pottmann, first employment: post-doc at MPI
- Sen Yang, graduated December 2014, co-chair Jieping Ye, first employment: Alibaba R&D, Seattle
- Chi-han Peng, graduated December 2014, first employment: post-doc with Prof. Mitra at UCL
- Fan Bao, graduated December 2014, first employment: Facebook
- Ming Cui, ASU, graduated February 2010, co-chair Anshuman Razdan, first employment: Google
- Pushpak Karnick, ASU, graduated August 2009, co-chair Anshuman Razdan, first employment: DigiPen Institute of Technology, Seattle

CURRENT GRADUATE STUDENTS

- Anna Fruehstueck (PhD)
- Wamiq R. Para (PhD)
- Peihao Zhu (PhD)
- Biao Zhang (PhD)
- Rameen Abdal (PhD)
- Shariq Farooq (PhD)
- Qian Wang (MS and PhD)
- Dinmukhamed Sagynbay (MS and PhD)
- Yanze Zhu (MS and PhD)
- Ahmed Abdelreheem (PhD)
- Ivan Skorokhodov (PhD)
- Aleksandar Cvejic (PhD)
- Jichen Lu (MS)

POST-DOCTORAL RESEARCHERS

- Yiqun Wang, 2021 – current
- Abdalla Gaafar Merghani Ahmed, 2018 – current
- Michael Birsak, 2019 – 2022, next employment: research scientist at KAUST
- Yipeng Qin, 2017 – 2019, next employment: faculty at Cardiff University, UK
- Ibraheem Alhashim, 2017 – 2020, next employment: SDAIA, KSA
- Lubin Fan, KAUST, 2014 – 2017, next employment: Alibaba
- Feilong Yan, KAUST, 2015 – 2016, next employment: Baidu
- Mohamed Hachama, KAUST, 2014 – 2016, next employment: faculty at University of Khemis Miliana, Algeria
- Paul Guerrero, KAUST, 2015, next employment: post-doc at UCL
- Yuanhao Cao, KAUST, 2013 – 2015
- Mohamed Ben Romdhane, KAUST, 2012, next employment: faculty at Gulf University for Science and Technology (Kuwait)
- Michael Schwarz, ASU, 2010 – 2011, next employment: post-doc at Cornell
- David Cline, ASU, 2007 – 2009, next employment: faculty at Oklahoma State University
- Stefan Jeschke, ASU, 2007 – 2009, next employment: post-doc at TU Vienna

RESEARCH SCIENTISTS

- Michael Birsak, KAUST, 2022 – ,
- Chi-Han Peng, KAUST, 2017 – 2019, next employment: assistant professor at Shanghai Tech
- Liangliang Nan, KAUST, 2013 – 2018, next employment: assistant professor at TU Delft
- Dongming Yang, KAUST, 2011 – 2014, next employment: associate professor at the Chinese Academy of Sciences

VISITORS

- Yiqun Wang, KAUST, 09.2019 – 08.2020
- Fatma Kabeer, KAUST, Spring 2018
- Mengke Yuan, KAUST, 01.12.2017 – 23.05.2018
- Songlin Chen, KAUST, 15.08.2017 – 25.01.2018
- Yuhai Lan, KAUST 10.02.2017 – 15.07.2017
- Weijie Tang, KAUST 01.07.2017 – 25.09.2017
- Wenming Wu, KAUST 2016 – 2017 (multiple visits)
- Haiyong Jiang, KAUST, 2014 – 2017 (multiple visits)
- Tianyu Ye, KAUST, 16.11.2015 – 13.05.2016
- Jiaqi Liu, KAUST, 17.12.2014 – 13.06.2015
- Hualiang Xie, KAUST, 17.12.2014 – 13.06.2015
- Minglei Li, KAUST, 20.08.2014 – 12.02.2015
- Ngoc Minh Dang, 15.11.2014 – 23.01.2015
- Paul Guerrero, KAUST, 2012 – 2015 (multiple visits)
- Fuzhang Wu, KAUST, 2012 – 2013 (multiple visits)
- Tom Kelly, KAUST, 5.11.2011 – 19.12.2011
- Gurkan Koldas, ASU, 2010
- Tom Kelly, ASU, 2009
- Alejandro Sanchez Guinea, ASU, 2009 – 2010
- Fu Yinghua, ASU, 2007

REMOTE INTERNS

- Hiroyasu Akada, KAUST, 09.2020 - 05.2021
- Zaid Bhat, KAUST, 10.2020 - 12.2020
- Muhammad Usman, KAUST, 10.2020
- Oscar Guarnizo, KAUST, 03.2021 - 08.2021
- Batyrbek Mukhatbekov, KAUST, 05.2021 - 01.2022

UNDERGRADUATE INTERNS / VISITORS

- Shahad Bagarish, KAUST, Summer 2019
- Abylay Toktassyn, KAUST, Summer 2019
- Faris Fathi M Aljamed, KAUST, KGSP, Summer 2019
- Rawan Alyahya, KAUST, KGSP, Summer 2018
- Anurag Sharma, KAUST, Summer 2018
- Abdulmajeed Aljaloud, KAUST, KGSP, Summer 2018
- Abdullellah Abualshour, KAUST, KGSP, Summer 2018
- Shan-Da (Sunda) Yang, KAUST, Summer 2017
- Faisal AlRayya, KAUST, KGSP, Summer 2017
- Yu Tian, KAUST, 15.11.2016 – 06.04.2017
- Xiaohan Wu, KAUST, 07.02.2017 – 10.06.2017
- Shan-Da Yang, KAUST, 02.07.2017 – 28.09.2017
- Abdullellah Abualshour, KAUST, KGSP, Summer 2017
- Abrar Kotbi, KAUST, Summer 2016
- Abdulrahman Humayed, KAUST, Summer 2016
- Naheel Alshafei, KAUST, Summer 2015
- Yazeed AlHarbi, KAUST, Summer 2014

UNDERGRADUATE RESEARCH PROJECTS

- Robert Winkler, ASU, Fall 2011, NSF
- Daniel Garvey, ASU, Fall 2010, NSF
- Paul Silkey, ASU, Fall 2010, NSF
- Robert Nelson, ASU, Spring 2008, Fulton Research Initiative for Undergraduates
- Sean Williams, ASU, Spring 2006, Fulton Research Initiative for Undergraduates
- Seth Carpenter, ASU, Spring 2006, Fulton Research Initiative for Undergraduates
- Jacob Boyle, ASU, Fall 2006, Fulton Research Initiative for Undergraduates

VISITING HIGHSCHOOL STUDENTS

- Wesam Felemban, KAUST, SRSI, summer 2018
- Faris Aldilajjan, KAUST, SRSI, summer 2017
- Reema BinMandeel, KAUST, SRSI, summer 2014

Notes: In Visual Computing many conferences publish the proceedings as special issues of journals. For example ACM SIGGRAPH has published proceedings in ACM TOG since 2002 and IEEE Visualization has published proceedings in IEEE TVCG since 2006. In case a conference directly publishes proceedings in a journal I only list them as journal publication. For citation statistics please refer to my google scholar page [<http://scholar.google.com/citations?user=0EKXSXgAAAAJ>].

1. **Gaussian Blue Noise**
Abdalla G. M. Ahmed, Jing Ren, Peter Wonka
ACM Siggraph Asia, 2022.
2. **Assessment of Material Layers in Building Walls Using GeoRadar**
Ildar Gilmutdinov, Ingrid Schloegel, Alois Hinterleitner, Peter Wonka, Michael Wimmer
Remote Sensing, 2022.
3. **Intuitive and Efficient Roof Modeling for Reconstruction and Synthesis**
Jing Ren, Biao Zhang, Bojian Wu, Jianqiang Huang, Lubin Fan, Maks Ovsjanikov, Peter Wonka
ACM Transactions on Graphics (Proceedings of ACM Siggraph Asia), 2021.
4. **Barbershop: GAN-based Image Compositing using Segmentation Masks**
Peihao Zhu, Rameen Abdal, John Femiani, Peter Wonka
ACM Transactions on Graphics (Proceedings of ACM Siggraph Asia), 2021.
5. **Computational Design of Lightweight Trusses**
Caigui Jiang, C. Tang, H.-P. Seidel, R. Chen, Peter Wonka
Computer Aided Design, 2021.
6. **Discrete Optimization for Shape Matching**
Jing Ren, Simone Melzi, Peter Wonka, Maks Ovsjanikov
Computer Graphics Forum (Symposium on Geometry Processing), 2021.
7. **Customized Summarizations of Visual Data Collections**
Mengke Yuan, Bernard Ghanem, Dong-Ming Yan, Baoyuan Wu, Xiaopeng Zhang, Peter Wonka
Computer Graphics Forum, 2021.
8. **Manhattan Room Layout Reconstruction from a Single 360° Image: A Comparative Study of State-of-the-Art Methods**
Chuhang Zou, Jheng-Wei Su, Chi-Han Peng, Alex Colburn, Qi Shan, Peter Wonka, Hung-Kuo Chu, Derek Hoiem
International Journal of Computer Vision, 2021.
9. **StyleFlow: Attribute-conditioned Exploration of StyleGAN-Generated Images using Conditional Continuous Normalizing Flows**
Rameen Abdal, Peihao Zhu, Niloy J. Mitra, Peter Wonka
ACM Transactions on Graphics, 2021.
10. **Optimizing Dyadic Nets**
Abdalla G.M. Ahmed, Peter Wonka
ACM Transactions on Graphics (Proceedings of ACM Siggraph), 2021.
11. **Geometric analysis of shape variability of lower jaws of prehistoric humans**
Jing Ren, Peter Wonka, Gowtham Harihara, Maks Ovsjanikov
L'Anthropologie, 2020.
12. **MGCN: Descriptor Learning using Multiscale GCNs**
Yiqun Wang, Jing Ren, Dong-Ming Yan, Jianwei Guo, Xiaopeng Zhang, Peter Wonka
ACM Transactions on Graphics (Proceedings of ACM Siggraph), 2020.
13. **MapTree: Recovering Multiple Solutions in the Space of Maps**
Jing Ren, Simone Melzi, Peter Wonka, Maks Ovsjanikov
ACM Transactions on Graphics (Proceedings of ACM Siggraph Asia), 2020.
14. **Screen-Space Blue-Noise Diffusion of Monte Carlo Sampling Error via Hierarchical Ordering of Pixels**
Abdalla G. M. Ahmed, Peter Wonka
ACM Transactions on Graphics (Proceedings of ACM Siggraph Asia), 2020.
15. **Photorealistic Material Editing Through Direct Image Manipulation**
Károly Zsolnai-Fehér, Peter Wonka, Michael Wimmer
Computer Graphics Forum (Symposium on Rendering), 2020.
16. **Consistent ZoomOut: Efficient Spectral Map Synchronization**
R. Huang, J. Ren, P. Wonka, M. Ovsjanikov
Computer Graphics Forum (Symposium on Geometry Processing), 2020.

17. **Large-Scale Architectural Asset Extraction from Panoramic Imagery**
P. Zhu, W. Para, A. Frühstück, J. Femiani, P. Wonka
IEEE Transactions on Visualization and Computer Graphics, 2020.
18. **Modeling in the Time of COVID-19: Statistical and Rule-based Mesoscale Models**
Ngan Nguyen, Ondrej Strnad, Tobias Klein, Deng Luo, Ruwayda Alharbi, Peter Wonka, Martina Maritan, Peter Mindek, Ludovic Autin, David S. Goodsell, Ivan Viola
IEEE Transactions on Visualization and Computer Graphics (IEEE VIS), 2020.
19. **Study of Spray Structure from Non-flash to Flash Boiling Conditions with Space-time Tomography**
Jianguo Du, Guangming Zang, Balaji Mohan, Ramzi Idoughi, Jaeheon Sim, Tiegang Fang, Peter Wonka, Wolfgang Heidrich, William L Roberts
International Symposium on Combustion, 2020.
20. **PLADE: A Plane-based Descriptor for Point Cloud Registration with Small Overlap**
Songlin Chen, Liangliang Nan, Renbo Xia, Jibin Zhao, Peter Wonka
IEEE Transactions on Geoscience and Remote Sensing, 2019.
21. **StructureNet: Hierarchical Graph Networks for 3D Shape Generation**
Kaichun Mo, Paul Guerrero, Li Yi, Hao Su, Peter Wonka, Niloy Mitra, Leonidas Guibas
ACM Transactions on Graphics (Proceedings of ACM Siggraph Asia), 2019.
22. **Checkerboard Patterns with Black Rectangles**
Chi-Han Peng, Caigui Jiang, Peter Wonka, Helmut Pottmann
ACM Transactions on Graphics (Proceedings of ACM Siggraph Asia), 2019.
23. **ZoomOut: Spectral Upsampling for Efficient Shape Correspondence**
Simone Melzi, Jing Ren, Emanuele Rodola, Abhishek Sharma, Peter Wonka, Maks Ovsjanikov
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24. **TileGAN: TileGAN: Synthesis of Large-Scale Non-Homogeneous Textures**
Anna Frühstück, Ibraheem Alhashim, Peter Wonka
ACM Transactions on Graphics (Proceedings of ACM Siggraph), 2019.
25. **Warp-and-Project Tomography for Rapidly Deforming Objects**
Guangming Zang, Ramzi Idoughi, Ran Tao, Gilles Lubineau, Peter Wonka, Wolfgang Heidrich
ACM Transactions on Graphics (Proceedings of ACM Siggraph), 2019.
26. **Structured Regularization of Functional Map Computations**
Jing Ren, Mikhail Panine, Peter Wonka, Maks Ovsjanikov
Computer Graphics Forum (Symposium on Geometry Processing), 2019.
27. **Local Editing of Procedural Models**
Markus Lipp, Markus Specht, Cheryl Lau, Peter Wonka, Pascal Müller
Computer Graphics Forum (Proceedings of Eurographics), 2019.
28. **FrankenGAN: Guided Detail Synthesis for Building Mass-Models Using Style-Synchronized GANs**
Tom Kelly, Paul Guerrero, Anthony Steed, Peter Wonka, Niloy J Mitra
ACM Transactions on Graphics (Proceedings of ACM Siggraph Asia), 2018.
29. **Continuous and Orientation-preserving Correspondences via Functional Maps**
Jing Ren, Adrien Poulenard, Peter Wonka, Maks Ovsjanikov
ACM Transactions on Graphics (Proceedings of ACM Siggraph Asia), 2018.
30. **Gaussian Material Synthesis**
Károly Zsolnai-Fehér, Peter Wonka, Michael Wimmer
ACM Transactions on Graphics (Proceedings of ACM Siggraph), 2018.
31. **Space-time Tomography for Continuously Deforming Objects**
Guangming Zang, Ramzi Idoughi, Ran Tao, Gilles Lubineau, Peter Wonka, Wolfgang Heidrich
ACM Transactions on Graphics (Proceedings of ACM Siggraph), 2018.
32. **Designing Patterns using Triangle-Quad Hybrid Meshes**
Chi-han Peng, Helmut Pottmann, Peter Wonka
ACM Transactions on Graphics (Proceedings of ACM Siggraph), 2018.
33. **MIQP-based Layout Design for Building Interiors**
Wenming Wu, Lubin Fan, Ligang Liu, Peter Wonka
Computer Graphics Forum (Proceedings of Eurographics), 2018.
34. **String Art: Towards Computational Fabrication of String Images**
Michael Birsak, Florian Rist, Peter Wonka, Przemyslaw Musialski
Computer Graphics Forum (Proceedings of Eurographics), 2018.

35. **Selection Expressions for Procedural Modeling**
Haiyong Jiang, Dong-Ming Yan, Xiaopeng Zhang, Peter Wonka
IEEE Transactions on Visualization and Computer Graphics, 2018.
36. **Isotropic Surface Remeshing without Large and Small Angles**
Yiqun Wang, Dong-Ming Yan, Xiaohan Liu, Chengcheng Tang, Jianwei Guo, Xiaopeng Zhang, Peter Wonka
IEEE Transactions on Visualization and Computer Graphics, 2018.
37. **BigSUR: Large-scale Structured Urban Reconstruction**
Tom Kelly, John Femiani, Peter Wonka, Niloy Mitra
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38. **How Do Users Map Points Between Dissimilar Shapes?**
Michael Hecher, Paul Guerrero, Peter Wonka, Michael Wimmer
IEEE Transactions on Visualization and Computer Graphics, 2017
39. **Design and Volume Optimization of Space Structures**
Caigui Jiang, Chengcheng Tang, Hans-Peter Seidel, Peter Wonka
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40. **Design Transformations for Rule-based Procedural Modeling**
Stefan Lienhard, Cheryl Lau, Pascal Muller, Peter Wonka, Mark Pauly
Computer Graphics Forum (Proceedings of Eurographics), 2017
41. **Joint Graph Layouts for Visualizing Collections of Segmented Meshes**
Jing Ren, Jens Schneider, Maks Ovsjanikov, Peter Wonka
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42. **Dynamic Path Exploration on Mobile Devices**
Michael Birsak, Przemyslaw Musialski, Peter Wonka, Michael Wimmer
IEEE Transactions on Visualization and Computer Graphics, 2017
43. **Block Assembly for Global Registration of Building Scans**
Feilong Yan, Liangliang Nan, Peter Wonka
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44. **A Probabilistic Model for Exteriors of Residential Buildings**
Lubin Fan, Peter Wonka
ACM Transactions on Graphics, 2016.
45. **Computational Network Design from Functional Specifications**
Chi-han Peng, Yong-Liang Yang, Fan Bao, Daniel Fink, Dong-Ming Yan, Peter Wonka, Niloy Mitra
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46. **RAID: A Relation-Augmented Image Descriptor**
Paul Guerrero, Niloy Mitra, Peter Wonka
ACM Transactions on Graphics (Proceedings of ACM Siggraph), 2016.
47. **Tetrahedral meshing via maximal Poisson-disk sampling**
Jianwei Guo, Dong-Ming Yan, Li Chen, Xiaopeng Zhang, Oliver Deussen, Peter Wonka
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48. **Automatic Constraint Detection for Layout Regularization**
Haiyong Jiang, Liangliang Nan, Dong-Ming Yan, Weiming Dong, Xiaopeng Zhang, Peter Wonka
IEEE Transactions on Visualization and Graphics, 2016
49. **Non-obtuse Remeshing with Centroidal Voronoi Tessellation**
Dong-Ming Yan, Peter Wonka
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50. **Capacity Constrained Blue-Noise Sampling on Surfaces**
Sen Zhang, Jianwei Guo, Hui Zhang, Xiaohong Jia, Dong-Ming Yan, Jun-Hai Yong, Peter Wonka
Computers and Graphics, 2016.
51. **Reconstructing Building Mass Models from UAV Images**
Minglei Li, Liangliang Nan, Neil Smith, Peter Wonka
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52. **Learning Shape Placements by Example**
Paul Guerrero, Stefan Jeschke, Michael Wimmer, Peter Wonka
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53. **Interactive Design of Probability Density Functions for Shape Grammars**
Minh Dang, Stefan Lienhard, Duygu Ceylan, Boris Neubert, Peter Wonka, Mark Pauly
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54. **Polyhedral Pattern**
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55. **Interactive Dimensioning of Parametric Models**
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56. **Designing Camera Networks by Convex Quadratic Programming**
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57. **Template Assembly for Detailed Urban Reconstruction**
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60. **Lasso screening rules via dual polytope projection**
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61. **Robust Rooftop Extraction From Visible Band Images Using Higher Order CRF**
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62. **Shadow Based Rooftop Segmentation In Visible Band Images**
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63. **Inverse Procedural Modeling of Facade Layouts**
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64. **Computing layouts with deformable templates**
Chi-han Peng, Yong-Liang Yang, Peter Wonka
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65. **PushPull++**
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66. **Exploring Quadrangulations**
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67. **Edit Propagation using Geometry Relationship Functions**
Paul Guerrero, Stefan Jeschke, Michael Wimmer, Peter Wonka
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68. **Procedural Design of Exterior Lighting for Buildings with Complex Constraints**
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69. **Structure Completion for Grid Layouts**
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70. **Low-Resolution Remeshing using the Localized Restricted Voronoi Diagram**
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71. **Unbiased Sampling and Meshing of Isosurfaces**
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72. **Parallel Generation of Architecture on the GPU**
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78. **Patch Layout Generation by Detecting Feature Networks**
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84. **Connectivity Editing for Quad-Dominant Meshes**
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90. **Sparse Non-negative Tensor Factorization Using Columnwise Coordinate Decent**
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92. **Interactive Architectural Modeling with Procedural Extrusions**
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93. **Interactive Modeling of City Layouts using Layers of Procedural Content**
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94. **Estimating Color and Texture Parameters for Vector Graphics**
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95. **Geometry Synthesis on Surfaces Using Field-Guided Shape Grammars**
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97. **Editing Operations for Irregular Vertices in Triangle Meshes**
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98. **Route Visualization using Detail Lenses**
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99. **Color to Gray Conversion Using ISOMAP**
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100. **Parallel Generation of Multiple L-Systems**
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101. **Modeling the Appearance and Behavior of Urban Spaces**
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103. **Adaptive Global Visibility Sampling**
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104. **A Minimal Surface Poisson Solver for Diffusion Curves and Image Editing**
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105. **Rendering Surface Details with Diffusion Curves**
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106. **Compressed Façade Displacement Mapping**
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109. **Dart throwing on surfaces**
David Cline, Stefan Jeschke, Anshuman Razdan, Kenric White, Peter Wonka
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110. **A Shape Grammar for Developing Glyph-based Visualizations**
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111. **A Comparison of Tabular PDF Inversion Methods.**
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112. **GPU Rendering of Relief Mapped Concial Frusta**
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113. **Curve Matching for Open 2D Curves**
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114. **Generating 3D Building Models from Architectural Drawings: A Survey**
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117. **Visibility-driven Mesh Analysis and Visualization through Graph Cuts**
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118. **Procedural Urban Modeling in Practice**
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123. **Procedural Modeling of Buildings**
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124. **Punctuated Simplification**
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1. **3DILG: Irregular Latent Grids for 3D Generative Modeling**
Biao Zhang, Matthias Nießner, Peter Wonka
Advances in Neural Information Processing Systems (NeurIPS), 2022.
2. **EpiGRAF: Rethinking training of 3D GANs**
Ivan Skorokhodov, Sergey Tulyakov, Yiqun Wang, Peter Wonka
Advances in Neural Information Processing Systems (NeurIPS), 2022.
3. **HF-NeuS: Improved surface reconstruction using high-frequency details**
Yiqun Wang, Ivan Skorokhodov, Peter Wonka
Advances in Neural Information Processing Systems (NeurIPS), 2022.
4. **InsetGAN for Full-Body Image Generation**
Anna Frühstück, Krishna Kumar Singh, Eli Shechtman, Niloy J Mitra, Peter Wonka, Jingwan Lu
IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2022.
5. **LocalBins: Improving Depth Estimation by Learning Local Distributions**
Shariq Farooq Bhat, Ibraheem Alhashim, Peter Wonka
European Conference on Computer Vision (ECCV), 2022.
6. **On the Robustness of Quality Measures for GANs**
Motasem Alfarra, Juan C Pérez, Anna Frühstück, Philip HS Torr, Peter Wonka, Bernard Ghanem
European Conference on Computer Vision (ECCV), 2022.
7. **HairNet: Hairstyle Transfer with Pose Changes**
Peihao Zhu, Rameen Abdal, John Femiani, Peter Wonka
European Conference on Computer Vision (ECCV), 2022.
8. **3DCoMPaT: Composition of Materials on Parts of 3D Things**
Yuchen Li, Ujjwal Upadhyay, Habib Slim, Ahmed Abdelreheem, Arpit Prajapati, Suhail Pothigara, Peter Wonka, Mohamed Elhoseiny
European Conference on Computer Vision (ECCV) (Oral), 2022.
9. **Clip2stylegan: Unsupervised Extraction of Stylegan Edit Directions**
Rameen Abdal, Peihao Zhu, John Femiani, Niloy Mitra, Peter Wonka
ACM Siggraph Conference, 2022.
10. **Learning to Construct 3D Building Wireframes from 3D Line Clouds**
Yicheng Luo, Jing Ren, Xuefei Zhe, Di Kang, Yajing Xu, Peter Wonka, Linchao Bao
The British Machine Vision Conference (BMVC), 2022.
11. **Training Data Generating Networks: Shape Reconstruction via Bi-level Optimization**
Biao Zhang, Peter Wonka
International Conference on Learning Representations (ICLR), 2022.
12. **Mind the Gap: Domain Gap Control for Single Shot Domain Adaptation for Generative Adversarial Networks**
Peihao Zhu, Rameen Abdal, John Femiani, Peter Wonka
International Conference on Learning Representations (ICLR), 2022.
13. **Self-Supervised Learning of Domain Invariant Features for Depth Estimation**
Hiroyasu Akada, Shariq Farooq Bhat, Ibraheem Alhashim, Peter Wonka
IEEE/CVF Winter Conference on Applications of Computer Vision (WACV), 2022.
14. **RLSS: A Deep Reinforcement Learning Algorithm for Sequential Scene Generation**
Azimkhon Ostonov, Peter Wonka, Dominik Michels
IEEE/CVF Winter Conference on Applications of Computer Vision (WACV), 2022.
15. **Sketchgen: Generating Constrained CAD Sketches**
Wamiq Para, Paul Guerrero, Tom Kelly, Niloy Mitra, Leonidas Guibas, Peter Wonka
Advances in Neural Information Processing Systems (NeurIPS), 2021.
16. **Generative Layout Modeling using Constraint Graphs**
Wamiq Para, Paul Guerrero, Tom Kelly, Leonidas Guibas, Peter Wonka
IEEE International Conference on Computer Vision (ICCV), 2021.

17. **IntraTomo: Self-supervised Learning-based Tomography via Sinogram Synthesis and Prediction**
Guangming Zang, Ramzi Idoughi, Rui Li, Peter Wonka, Wolfgang Heidrich
IEEE International Conference on Computer Vision (ICCV), 2021.
18. **Labels4Free: Unsupervised Segmentation using StyleGAN**
Rameen Abdal, Peihao Zhu, Niloy Mitra, Peter Wonka
IEEE International Conference on Computer Vision (ICCV), 2021.
19. **Flow-Guided Video Inpainting with Scene Templates**
Dong Lao, Peihao Zhu, Peter Wonka, Ganesh Sundaramoorthi
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20. **AdaBins: Depth Estimation using Adaptive Bins**
Shariq Bhat, Ibraheem Alhashim, Peter Wonka
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21. **Point Cloud Instance Segmentation using Probabilistic Embeddings**
Biao Zhang, Peter Wonka
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22. **Fast Sinkhorn Filters: Using Matrix Scaling for Non-Rigid Shape Correspondence with Functional Maps**
Gautam Pai, Jing Ren, Simone Melzi, Peter Wonka, Maks Ovsjanikov
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23. **How does Lipschitz Regularization Influence GAN Training?**
Yipeng Qin, Niloy Mitra, Peter Wonka
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24. **Disentangled image generation through structured noise injection**
Yazeed Alharbi, Peter Wonka
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25. **SEAN: Image Synthesis with Semantic Region-Adaptive Normalization**
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26. **Image2StyleGAN++: How to Edit the Embedded Images?**
Rameen Abdal, Yipeng Qin, Peter Wonka
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27. **TomoFluid: Reconstructing Dynamic Fluid from Sparse View Videos**
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28. **StructEdit: Learning Structural Shape Variations**
Kaichun Mo, Paul Guerrero, Li Yi, Hao Su, Peter Wonka, Niloy Mitra, Leonidas Guibas
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29. **Study of Spray Structure from Non-flash to Flash Boiling Conditions with Space-time Tomography**
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Rameen Abdal, Yipeng Qin, Peter Wonka
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31. **DuLa-Net: A Dual-Projection Network for Estimating Room Layouts from a Single RGB Panorama**
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32. **Latent Filter Scaling for Multimodal Unsupervised Image-to-Image Translation**
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33. **Super-Resolution and Sparse View CT Reconstruction**
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