

## Liangliang Nan

Associate professor

Faculty of Architecture and the Built Environment

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## Research Interests

My research interests are in 3D computer vision, computer graphics, machine learning, and 3D geoinformation, with a practical commitment to developing algorithms and tools for effectively and efficiently acquiring, analyzing, understanding, and modeling real-world scenes.

I am leading the AI-Lab on 3D Urban Understanding (3DUU), together with Dr. Julian Kooij.

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## Academic Positions

- 2023.5 – present **Associate professor**  
3D Geoinformation Group, Faculty of Architecture and the Built Environment, Delft University of Technology. Netherlands
- 2018.1 – 2023.4 **Assistant professor**  
3D Geoinformation Group, Faculty of Architecture and the Built Environment, Delft University of Technology. Netherlands
- 2013.5 – 2018.1 **Research scientist**  
Visual Computing Center, King Abdullah University of Science and Technology, Kingdom of Saudi Arabia
- 2011.8 – 2013.5 **Associate professor**  
Visual Computing Research Center, Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences, P.R.China
- 2009.2 – 2011.7 **Assistant professor**  
Visual Computing Research Center, Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences, P.R.China

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## Education

- 2003.8 – 2009.1 **Ph.D. in mechatronics engineering** (Master-Doctor combined program)  
Graduate University of the Chinese Academy of Sciences, P.R.China
- 2003.8 – 2004.7 **Postgraduate courses**  
Department of Automation,  
University of Science and Technology of China, P.R.China
- 1999.9 – 2003.7 **B.Sc. in material science**  
Department of Material Science and Technology,  
Nanjing University of Aeronautics and Astronautics, P.R.China

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## Honors and Awards

- 2022 Excellent Graphics Open Source Software Award, CAD&CG 2022
- 2020 First Prize in Natural Science in the Science and Technology Award, China Computer Federation (CCF)

- 2020 Best Student Paper Award, The 35th Youth Academic Annual Conference of Chinese Association of Automation (YAC), 2020
- 2018 Best Paper Award. International Congress of Chinese Mathematicians (ICCM)
- 2017 Outstanding reviewer. Computers & Graphics
- 2015 Best Paper Award of CAD/Graphics 2015
- 2012 Lu Zengyong CAD&CG High Tech Award (2nd place)
- 2011 K.C.Wong Post-doctoral Fellowship, the Chinese Academy of Sciences
- 2010 Outstanding Research Award, the China National Computer Congress

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### Funded Projects (as PI)

- 2020 – 2025 AI lab on 3D Urban Understanding. AIDU program (TU Delft's AI, Data, and Digitalisation Research and Education Programme). 530,000 EUR
- 2013 – 2016 Recognition and understanding of 3D indoor scenes. NSF of China (General program, No. 61272327). 820,000 RMB
- 2011 – 2013 Architecture reconstruction based on structure analysis of point clouds. NSF of China (Young researcher program, No. 61003190). 190,000 RMB
- 2011 – 2012 Urban recognition and understanding based on the fusion of geometry and image data. China Postdoctoral Science Foundation (No. 201104146). 100,000 RMB
- 2011 – 2012 Theories and techniques for high precision and efficient urban architecture reconstruction from point clouds. Shenzhen Science and Technology Foundation (No. JC201005270340A). 100,000 RMB

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### Professional Activities

#### Program committee member

- ECCV - Area chair (2024)
- CGI (2023)
- ICCV - Area chair (2023)
- CVM (2023)
- CAD/Graphics (2017, 2019, 2021)
- AI3D (2019, 2020)
- CVPR (2018)
- ACCV (2014, 2016)
- ACM SIGGRAPH Asia Technical Briefs & Posters (2013, 2014, 2015, 2016)

#### Editorial board member (associate editor)

2013.7 – 2016.12 Frontiers of Computer Science (Youth AE)

#### Reviewer

Conferences SIGGRAPH, SIGGRAPH Asia, CVPR, ICCV, ECCV, ACCV, EG, PG, GI, CGI, CVM, CAD & Graphics, IROS, ISPRS Congress

- Journals ACM TOG, IEEE TGRS, IEEE TVCG, ISPRS PHOTO, CGF, CAD, CAGD, C&G, Remote Sensing of Environment, The Visual Computer, ACM Journal on Computing and Cultural Heritage, Remote Sensing, Computer Animation and Virtual Worlds, Pattern Recognition Letters, Frontiers of Computer Science, Integrated Computer Aided Engineering, International Journal of Recent Patents on Mechanical Engineering
- Grants Research Grants Council of Hong Kong, China (2023, 2024), National Natural Science Foundation of China (2013, 2014, 2015, 2021, 2022), Swiss National Science Foundation (2012, 2022), Guangdong Natural Science Foundation (2012)

### Research visits

- 2019.8 – 2019.8 Vexcel Imaging, Graz, Austria. Dr. Michael Gruber
- 2012.12 – 2013.1 Dept. Computer Science, Ben-Gurion University, Israel. Prof. Andrei Sharf
- 2011.12 – 2012.1 Dept. Computer Science, Ben-Gurion University, Israel. Prof. Andrei Sharf

### Associations

- 2011 – 2018 Geometric Design & Computing Committee of the China Society for Industrial and Applied Mathematics
- 2010 – 2018 Member of the ACM, IEEE

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### Teaching

- GEO5017 Machine learning for the built environment, Faculty of Architecture and the Built Environment, TU Delft (2022, 2023, 2024)
- GEO1016 Photogrammetry and 3D computer vision, Faculty of Architecture and the Built Environment, TU Delft (2020, 2021, 2022, 2023, 2024)
- GEO1001 Sensing technologies and mathematics for Geomatics, Faculty of Architecture and the Built Environment, TU Delft (2020)
- GEO1101 Synthesis project, Faculty of Architecture and the Built Environment, TU Delft (2019, 2020, 2021)
- GEO1004 3D modeling of the built environment. Computer, Faculty of Architecture and the Built Environment, TU Delft (2018, 2019)
- Fall 2015 Computer Graphics, Teaching assistant. Computer, Electrical and Mathematical Sciences & Engineering, KAUST

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### Supervision

#### Ongoing supervision

- Shiming Wang PhD (with Julian Kooij). Faculty of Mechanical, Maritime and Materials Engineering, TU Delft
- Mubariz Zaffar PhD (with Julian Kooij). Faculty of Mechanical, Maritime and Materials Engineering, TU Delft
- Nima Forouzandeh PhD (with Eleonora Brembilla and Jantien Stoter). Faculty of Architecture and the Built Environment, TU Delft
- Nail Ibrahimli PhD (with Hudo Ledoux). Faculty of Architecture and the Built Environment, TU Delft
- Shenglan Du PhD (with Jantien Stoter). Faculty of Architecture and the Built Environment, TU Delft

- Jin Huang PhD (with Jantien Stoter). Faculty of Architecture and the Built Environment, TU Delft
- Weixiao Gao PhD (with Hugo Ledoux). Faculty of Architecture and the Built Environment, TU Delft
- Yijie Wu Visiting PhD of Prof. Fan Xue. Department of Real Estate and Construction, The University of Hong Kong

### Completed supervision

- Leon Powalka 2023. MSc. Faculty of Architecture and the Built Environment, TU Delft
- Xiaoxin Mi 2023. Visiting PhD of Prof. Bisheng Yang. State Key Laboratory of Information Engineering in Surveying, Mapping and Remote Sensing (LIESMARS), Wuhan University
- Zexin Yang 2022. Visiting PhD of Prof. Xiaojun Cheng. College of Surveying and Geo-Informatics, Tongji University
- Noortje van der Horst 2022. MSc. Faculty of Architecture and the Built Environment, TU Delft
- Linjun Wang 2022. MSc. Faculty of Architecture and the Built Environment, TU Delft
- Zhaiyu Chen 2021. MSc. Faculty of Architecture and the Built Environment, TU Delft ([KHMW KNVI/KIVI Thesis Prize for Informatics and Information Science. Ranked No.1 among 400+ candidates](#))
- Pantelis Kaniouras 2020. MSc. Faculty of Architecture and the Built Environment, TU Delft
- Chirag Garg 2020. MSc. Faculty of Architecture and the Built Environment, TU Delft
- Yifang Zhao 2020. MSc. Faculty of Architecture and the Built Environment, TU Delft
- Yabin Xu 2019. Visiting PhD of Prof. Jun Wang. College of Mechanical and Electrical Engineering, NUAU
- Zhiwei Ai 2019. MSc. Faculty of Mechanical, Maritime and Materials Engineering, TU Delft
- Vasileios Bouzas 2019. MSc. Faculty of Architecture and the Built Environment, TU Delft
- Nikolaos Tzounakos 2019. MSc. Faculty of Architecture and the Built Environment, TU Delft
- Shenglan Du 2019. MSc. Faculty of Architecture and the Built Environment, TU Delft ([Best Thesis Award](#))
- Songlin Chen 2016. PhD student of Prof. Jibin Zhao. Shenyang Institute of Automation, Chinese Academy of Sciences
- Feilong Yan 2016. Postdoc of Prof. Peter Wonka. King Abdullah University of Science and Technology
- Yuanhao Cao 2015. Postdoc of Prof. Peter Wonka. King Abdullah University of Science and Technology
- Minglei Li 2015. PhD student of Prof. Shaochuang Liu. Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences
- Haiyong Jiang 2015. PhD student of Prof. Xiaopeng Zhang. Institute of Automation, Chinese Academy of Sciences
- Ke Xie 2013. PhD student of Prof. Baoquan Chen. Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences

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## Patents

- [11] PCT Patent: Method for Reconstruction of Urban Scenes.  
Baoquan Chen, **Liangliang Nan**, Qian Zheng. Publication No.: WO2012/012943 A1, Publication date: Feb. 2, 2012. Application No.: PCT/CN2010/007552, Filing date: Jul. 28, 2010
- [10] PCT Patent: Point Cloud Skeleton Extraction Method and Apparatus.  
Hui Huang, Shihao Wu, Baoquan Chen, **Liangliang Nan**. Publication No.: WO2014187046 A1, Publication date: Nov. 27, 2014. Application No.: PCT/CN2013/083441. Filing date: Sept. 13, 2013
- [9] U.S. Patent: Method for Reconstruction of Urban Scenes.  
Baoquan Chen, **Liangliang Nan**, Qian Zheng. Patent No.: US 08718393 B2, Date of Patent: May 6, 2014. Application No.: US12/935685, Application date: Jul. 28, 2010
- [8] U.S. Patent: Method and Device for Extracting Skeleton from Point Cloud.  
Hui Huang, Shihao Wu, Baoquan Chen, **Liangliang Nan**. Publication No.: US20160203636 A1, Publication date: Jul. 14, 2016. Application No.: US 14/378976. Filing date: Sept. 13, 2013
- [7] Chinese Patent: Method for Symmetrization of Facade Layouts.  
Haiyong Jiang, Dong-Ming Yan, Weiming Dong, **Liangliang Nan**, Fuzhang Wu, Jianwei Guo, Xiaopeng Zhang. Publication No.: CN105678031A, Publication date: Jun. 15, 2016. Application No.: 2016101224206, Filing date: Mar. 4, 2016
- [6] Chinese Patent: Method and System for Plant Growth Modeling.  
Zhanglin Cheng, Hui Huang, Daniel Cohen-Or, **Liangliang Nan**. Publication No.: CN103745497A, Publication date: Apr. 23, 2014. Application No.: 2013106758314. Filing date: Dec. 11, 2013
- [5] Chinese Patent: Method and Apparatus for Point Cloud Skeleton Extraction.  
Hui Huang, Shihao Wu, Baoquan Chen, **Liangliang Nan**. Publication No.: CN103268631A, Publication date: Aug. 28, 2013. Application No.: 2013101962432, Filing date: May. 23, 2013
- [4] Chinese Patent: Method and System for 3D Audio-Visual Display for Elevators.  
Wenqun Xiu, Shengzhong Feng, **Liangliang Nan**, Baoyun Zhang. Publication No.: CN103903585A, Publication date: Jul. 2, 2014. Application number: 201210568045X. Filing Date: Dec. 24, 2012
- [3] Chinese Patent: Method and Apparatus for Point Cloud Optimization.  
Hui Huang, Shihao Wu, **Liangliang Nan**, Baoquan Chen. Publication No.: CN103065354A, Publication date: Apr. 24, 2013. Application No.: 2012105670585, Filing Date: Dec. 14, 2012
- [2] Chinese Patent: Method and System for Classification and Reconstruction of Indoor Scenes.  
**Liangliang Nan**, Ke Xie, Hui Huang, Baoquan Chen. Publication No.: CN102945567B, Publication Date: Jun. 15, 2016 Application No.: 201210401274.2, Filing Date: Oct. 22, 2012
- [1] Chinese Patent: Method and System for Reconstruction of 3D Architecture Models.  
**Liangliang Nan**, Baoquan Chen, Zhanglin Cheng. Patent No.: ZL201010220298.9, Date Issued: Jul. 4, 2012

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## Publications

- [56] Lipeng Gu, Xuefeng Yan, **Liangliang Nan**, Dingkun Zhu, Honghua Chen, Weiming Wang, Mingqiang Wei PointeNet: A lightweight framework for effective and efficient point cloud analysis. Computer Aided Geometric Design, 102311, 2024
- [55] Jianwei Guo, Haobo Qin, Yinchang Zhou, Xin Chen, **Liangliang Nan**, Hui Huang. Fast Building Instance Proxy Reconstruction for Large Urban Scenes. IEEE Transactions on Pattern Analysis and Machine Intelligence, 2024

- [54] Mubariz Zaffar, **Liangliang Nan**, Julian Kooij. On the Estimation of Image-matching Uncertainty in Visual Place Recognition. IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR), 2024 ([Poster Highlight](#))
- [53] Zeyong Wei, Honghua Chen, **Liangliang Nan**, Jun Wang, Jing Qin, Mingqiang Wei. PathNet: Path-Selective Point Cloud Denoising. IEEE Transactions on Pattern Analysis and Machine Intelligence, 2024
- [52] Shiming Wang, Holger Caesar, **Liangliang Nan**, Julian Kooij. UniBEV: Multi-modal 3D Object Detection with Uniform BEV Encoders for Robustness against Missing Sensor Modalities. IEEE Intelligent Vehicles Symposium (IVS), 2024
- [51] Nail Ibrahimli, Julian Kooij, **Liangliang Nan**. MuVieCAST: Multi-View Consistent Artistic Style Transfer. International Conference on 3D Vision (3DV), 2024
- [50] Minglei Li, Shu Peng, **Liangliang Nan**. Hybrid geometry sets for global registration of cross-source geometric data. International Journal of Applied Earth Observation and Geoinformation. Vol. 128, 103733, 2024
- [49] Nima Forouzandeh, Eleonora Brembilla, **Liangliang Nan**, Jantien Stoter, Alstan Jakubiec. Influence of geometrical levels of detail and inaccurate material optical properties on daylight simulation. Energy and Buildings. Vol. 306, 113924, 2024
- [48] Nima Forouzandeh, Eleonora Brembilla, Jantien Stoter, **Liangliang Nan**. Impact of geometrical resolution on long-term climate-based daylight metrics. Building Simulation 2023: 18th International Conference of the Building Performance Simulation Association. 698-704, 2024
- [47] Jin Huang, Jantien Stoter, **Liangliang Nan**. Symmetrization of 2D Polygonal Shapes Using Mixed-Integer Programming. Computer-Aided Design. Vol. 163, 103572, 2023
- [46] Nail Ibrahimli, Hugo Ledoux, Julian Kooij, and **Liangliang Nan**. DDL-MVS: Depth Discontinuity Learning for Multi-View Stereo Networks. Remote Sensing. 15(12), 2970, 2023
- [45] Mubariz Zaffar, **Liangliang Nan**, Julian Kooij. CoPR: Towards Continuous Place-descriptor Regression in Latent Space for Accurate Visual Localization. IEEE Transactions on Robotics. 2023
- [44] Zhe Zhu, **Liangliang Nan**, Haoran Xie, Honghua Chen, Mingqiang Wei, Jun Wang, Jing Qin. CSDN: Cross-modal Shape-transfer Dual-refinement Network for Point Cloud Completion. IEEE Transactions on Visualization and Computer Graphics. 2023
- [43] Xufei Wang, Zexin Yang, Xiaojun Cheng, Jantien Stoter, Wenbing Xu, Zhenlun Wu, **Liangliang Nan**. GlobalMatch: Registration of Forest Terrestrial Point Clouds by Global Matching of Relative Stem Positions. ISPRS Journal of Photogrammetry and Remote Sensing. Vol. 197, 71-86, 2023
- [42] Weixiao Gao, **Liangliang Nan**, Bas Boom, Hugo Ledoux. PSSNet: Planarity-sensible Semantic Segmentation of Large-scale Urban Meshes. ISPRS Journal of Photogrammetry and Remote Sensing. Vol. 196, 32-44, 2023
- [41] Zexin Yang, Qin Ye, Jantien Stoter, **Liangliang Nan**. Enriching Point Clouds with Implicit Representations for 3D Classification and Segmentation. Remote Sensing, 15(1), 61, 2023
- [40] Zhaiyu Chen, Hugo Ledoux, Seyran Khademi, **Liangliang Nan**. Reconstructing Compact Building Models from Point Clouds Using Deep Implicit Fields. ISPRS Journal of Photogrammetry and Remote Sensing. Vol. 194, 58-73, 2022
- [39] Shenglan Du, Nail Ibrahimli, Jantien Stoter, Julian Kooij, **Liangliang Nan**. Push-the-Boundary: Boundary-aware Feature Propagation for Semantic Segmentation of 3D Point Clouds. International Conference on 3D Vision (3DV), 2022

- [38] Guangpeng Fan, Zhenyu Xu, Jinhua Wang, **Liangliang Nan**, Huijie Xiao, Zhiming Xin, Feixiang Chen. Plot-level reconstruction of 3D tree models for aboveground biomass estimation. *Ecological Indicators*, Vol. 142, 109211, 2022
- [37] Yabin Xu, **Liangliang Nan**, Laishui Zhou, Jun Wang, Charlie C.L. Wang. HRBF-Fusion: Accurate 3D Reconstruction from RGB-D Data Using On-the-Fly Implicits. *ACM Transactions on Graphics*. Feb. 23, 2022
- [36] Minglei Li, Jiasong Li, Alexis Tamayo, **Liangliang Nan**. Multiple Object Tracking using a Transform Space. *ISPRS Annals of the Photogrammetry, Remote Sensing and Spatial Information Sciences*. Vol. 4, 137-143, 2022
- [35] Jiazhou Chen, Yanghui Xu, Shufang Lu, Ronghua Liang, **Liangliang Nan**. 3D Instance Segmentation of MVS Buildings. *IEEE Transactions on Geoscience and Remote Sensing*. vol. 60, pp. 1-14, 2022
- [34] Jin Huang, Jantien Stoter, Ravi Peters, **Liangliang Nan**. City3D: Large-Scale Building Reconstruction from Airborne LiDAR Point Clouds. *Remote Sensing*. 14(9), 2254. 2022
- [33] Xuejun Xing, Jianwei Guo, **Liangliang Nan**, Qingyi Gu, Xiaopeng Zhang, Dong-Ming Yan. Efficient MSPSO Sampling for Object Detection and 6D Pose Estimation in 3D Scenes. *IEEE Transactions on Industrial Electronics*. v69 (10), 10281 - 10291. 2022
- [32] **Liangliang Nan**. Easy3D: a lightweight, easy-to-use, and efficient C++ library for processing and rendering 3D data. *Journal of Open Source Software*, 6(64), 3255, 2021
- [31] Weixiao Gao, **Liangliang Nan**, Bas Boom, and Hugo Ledoux. SUM: A Benchmark Dataset of Semantic Urban Meshes. *ISPRS Journal of Photogrammetry and Remote Sensing*. 179, 108-120, 2021
- [30] Minglei Li, Xingke Zhao, Jiasong Li and **Liangliang Nan**. ComNet: Combinational Neural Network for Object Detection in UAV-Borne Thermal Images. *IEEE Transactions on Geoscience and Remote Sensing*. 59(8), 6662 - 6673, 2021
- [29] Minglei Li and **Liangliang Nan**. Feature-preserving 3D mesh simplification for urban buildings. *ISPRS Journal of Photogrammetry and Remote Sensing*. 173, 135-150, 2021
- [28] Guangpeng Fan, **Liangliang Nan**, Yanqi Dong, Xiaohui Su, and Feixiang Chen. AdQSM: A New Method for Estimating Above-Ground Biomass from TLS Point Clouds. *Remote Sensing*. 12(18), 3089, 2020
- [27] Bingtao Ma, Hongsen Liu, **Liangliang Nan**, and Yang Cong. An End-to-End Geometric Deficiency Elimination Algorithm for 3D Meshes. *YAC 2020 (Best Paper Award)*
- [26] Vasileios Bouzas, Hugo Ledoux, and **Liangliang Nan**. Structure-aware Building Mesh Polygonization. *ISPRS Journal of Photogrammetry and Remote Sensing*, 167, 432-442, 2020
- [25] Guangpeng Fan, **Liangliang Nan**, Feixiang Chen, Yanqi Dong, Zhiming Wang, Hao Li, and Danyu Chen. A New Quantitative Approach to Tree Attributes Estimation Based on LiDAR Point Clouds. *Remote Sensing*. 12(11), 1779, 2020
- [24] Songlin Chen, **Liangliang Nan**, Renbo Xia, Jibin Zhao, and Peter Wonka. PLADE: A Plane-based Descriptor for Point Cloud Registration with Small Overlap. *IEEE Transactions on Geoscience and Remote Sensing*. 58(4), 2530-2540, 2020
- [23] Shenglan Du, Roderik Lindenbergh, Hugo Ledoux, Jantien Stoter, and **Liangliang Nan**. AdTree: Accurate, Detailed, and Automatic Modelling of Laser-Scanned Trees. *Remote Sensing*. 11(18), 2074, 2019
- [22] Yisong Gao, Lifang Wu, Dong-Ming Yan, and **Liangliang Nan**. Near Support-free Multi-directional 3D Printing via Global-optimal Decomposition. *Graphical Models*. Volume 104, 101034, July 2019

- [21] **Liangliang Nan** and Peter Wonka. PolyFit: Polygonal Surface Reconstruction from Point Clouds. *ICCV 2017*
- [20] Feilong Yan, **Liangliang Nan**, and Peter Wonka. Block Assembly for Global Registration of Building Scans. *ACM Transactions on Graphics*, Vol.35, No.6, Nov. 2016 (*ACM SIGGRAPH Asia 2016*)
- [19] Minglei Li, Peter Wonka, and **Liangliang Nan**. Manhattan-world Urban Reconstruction from Point Clouds. *Lecture Notes in Computer Science*, Vol. 9908, pp. 54-69, Sept. 2016 (*ECCV 2016*)
- [18] Lama Affara, **Liangliang Nan**, Bernard Ghanem, and Peter Wonka. Large Scale Asset Extraction for Urban Images. *Lecture Notes in Computer Science*, Vol. 9907, pp. 437-452, Sept. 2016 (*ECCV 2016*)
- [17] Yuanhao Cao, **Liangliang Nan**, and Peter Wonka. Curve Networks for Surface Reconstruction. *arXiv: 1603.08753 [cs.GR]*, Mar. 2016 ([Best Paper Award ICCM, 2018](#))
- [16] Minglei Li, **Liangliang Nan**, and Shaochuang Liu. Fitting Boxes to Manhattan Scenes Using Linear Integer Programming. *International Journal of Digital Earth*, Vol. 9, No. 8, pp. 806-817, Feb. 2016
- [15] Haiyong Jiang, Dong-Ming Yan, Weiming Dong, Fuzhang Wu, **Liangliang Nan**, and Xiaopeng Zhang. Symmetrization of Facade Layouts. *Graphical Models*, Vol. 85, pp. 11-21, Feb. 2016 (*Computational Visual Media 2016*)
- [14] Haiyong Jiang, **Liangliang Nan**, Dong-Ming Yan, Weiming Dong, Xiaopeng Zhang, and Peter Wonka. Automatic Constraint Detection for 2D Layout Regularization. *IEEE Transactions on Visualization and Computer Graphics*, Vol. 22, No. 8, pp. 1933-1944, Aug. 2016
- [13] Minglei Li, **Liangliang Nan**, Neil Smith, and Peter Wonka. Reconstructing Building Mass Models from UAV Images. *Computers & Graphics*, Vol. 54, pp. 84-93, Aug. 2016 (*CAD/Graphics 2015*) ([Best Paper Award](#))
- [12] **Liangliang Nan**, Caigui Jiang, Bernard Ghanem, and Peter Wonka. Template Assembly for Detailed Urban Reconstruction. *Computer Graphics Forum*, Vol. 34, No. 2, May. 2015 (*EUROGRAPHICS 2015*)
- [11] **Liangliang Nan**, Andrei Sharf, and Baoquan Chen. 2D-3D Lifting for Shape Reconstruction. *Computer Graphics Forum*, Vol. 33, No. 7, Oct. 2014 (*Pacific Graphics 2014*)
- [10] **Liangliang Nan**, Ke Xie, and Andrei Sharf. A Search-Classify Approach for Cluttered Indoor Scene Understanding. *ACM Transactions on Graphics*, Vol. 31, No. 6, Dec. 2012 (*ACM SIGGRAPH Asia 2012*)
- [9] **Liangliang Nan**, Andrei Sharf, Ke Xie, Tien-Tsin Wong, Oliver Deussen, Daniel Cohen-Or, and Baoquan Chen. Conjoining Gestalt Rules for Abstraction of Architectural Drawings. *ACM Transactions on Graphics*, Vol. 30, No. 6, Dec. 2011 (*ACM SIGGRAPH Asia 2011*)
- [8] **Liangliang Nan**, Andrei Sharf, Hao Zhang, Daniel Cohen-Or, and Baoquan Chen. SmartBoxes for Interactive Urban Reconstruction. *ACM Transactions on Graphics*, Vol. 29, No. 4, Jul. 2010 (*ACM SIGGRAPH 2010*)
- [7] **Liangliang Nan** and Weijun Liu. Silhouette-based Interactive Editing for Mesh Models. *CAD/CG 2010 (in Chinese)*, pp. 755-764, Jul. 2010
- [6] **Liangliang Nan**, Weijun Liu, and Kai Zhang. Laser Remanufacturing Based on the Integration of Reverse Engineering and Laser Cladding. *International Journal of Computer Applications in Technology*. Vol. 37, No. 2, pp. 116-124, 2010
- [5] **Liangliang Nan** and Baoquan Chen. Recent Advances in Point Cloud Reconstruction. *Bulletin of Advanced Technology Research (in Chinese)*. Vol. 3, No. 6, pp. 45-49, 2009



- [4] Shujuan Jiang, Weijun Liu, and **Liangliang Nan**. Laser Cladding Height Prediction Based on Neural Network. *Journal of Mechanical Engineering (in Chinese)*. Vol. 45, No. 3, pp. 269-274. 2009
- [3] **Liangliang Nan** and Weijun Liu. Three Dimensional Measuring and Data Processing in Reverse Engineering. *Chinese Journal of Scientific Instrument (in Chinese)*. Vol. 28, No. 4, pp. 53-55, 2007
- [2] **Liangliang Nan** and Weijun Liu. Sensing and Control for Geometry Stability of the Melt Pool and the Cross Sectional Area in Laser Cladding. *Proceedings of the International Conference on Innovative Computing, Information and Control*, Vol. 1, pp. 521-524, Aug. 2006
- [1] **Liangliang Nan**, Weijun Liu, and Kai Zhang. Modeling for Laser-Material Interaction to Predict and Control the Cross Sectional Area of Coaxial Laser Cladding with Powder. *Proceedings of the International conference on Advanced Design and Manufacture*, pp. 386-390, Jan. 2006