



中国测绘学会

Chinese Society for Geodesy Photogrammetry and Cartography

To: Christian Heipke
ISPRS President
Professor of Leibniz University Hannover, Germany
E-mail: isprs-pr@isprs.org

From: SONG Chaozhi
Coordinator to ISPRS
President
Chinese Society for Geodesy Photogrammetry and Cartography
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April 28, 2022

Dear Prof. Christian Heipke,

On behalf of Chinese Society for Geodesy Photogrammetry and Cartography, here we submit the application for hosting Technical Commission II (Photogrammetry) for the next four year period (2022-2026).

1. Proposed Technical Commission President (TCP):

President: Prof. Dr. YANG Bisheng, Wuhan University, China

Vice-president: Prof. Dr. Hyypä Juha, Finnish Geospatial Research Institute, Finland

Director Secretary: Dr. CHEN Chi, Wuhan University, China.

Biography of Prof. Dr. YANG Bisheng:

Dr. YANG Bisheng was born in Anhui Province, China, in 1974. He received his BSc and MSc. degrees in Geomatics Engineering from Wuhan Technical University of Surveying and Mapping, China, in 1996 and 1999, respectively, obtained his Ph.D. degree in Photogrammetry and Remote Sensing in 2002 from Wuhan University, in China, and worked as a postdoctoral research fellow at Department of Geography, University of Zurich (UZH), Switzerland, from 2002-2006. He is now a full Professor in Geoinformatics and assistant director of the State Key Laboratory of Information Engineering in Surveying, Mapping and Remote Sensing (LIESMARS) in Wuhan University, China. He holds 'Yangtze River Scholar' Distinguished Professor and Distinguished Young Scholars Professor (Top 5 under 45 years old in the field of Photogrammetry, Remote Sensing and GIS in China). His research expertise includes photogrammetry, point cloud processing, and GIS applications. Dr. Yang has so far



published more than 100 papers in peer-review journal articles, conference and workshop proceedings, more than 50 of them are in SCI-indexed journal articles.

He has quite a lot experiences on ISPRS affairs. He served as the secretary of ISPRS WG II/1 during 2008-2012, as Co-Chair of ISPRS WG II/3 (point cloud processing) during 2016-2020, as Editorial Boarding Member of ISPRS Journal of Photogrammetry and Remote Sensing from 2016-2024. He is the recipient of a lot of national and international academic awards including Carl Pulfrich Award (2019), ESRI Best Scientific Paper in GIS awarded by ASPRS (2005), First order award from the Ministry of Education of China (2009), First order award from Bureau of Science and Technology of Hubei Province (2016).

He organized and participated in organizing many national and international conferences and chaired many conferences, such as ISPRS Geospatial Week, Laser Scanning, MMT, and serves as program committee member of more than 10 international conferences, symposiums, and workshops in the field of GeoInformatics. He was also the local host of ISPRS GSW2017 with more than 1500 participants.

He is also active in cooperation with industrial community. His technology in point cloud processing has successfully transferred to Baidu Inc. for automated driving and Huawei Inc. for 5G communication. His technology in low-cost light-UAV laser scanning has been working effectively in China Southern GRID for power line corridor 3D mapping and risk monitoring since 2015.

Biography of Prof. Dr. Hyypä Juha

Prof. Dr. Hyypä Juha is a professor of Remote Sensing and Photogrammetry at FGI, Director of NLS-FGI (Finnish Geospatial Research Institute of the National Land Survey of Finland), Remote Sensing Department, distinguished professor at Shinshu University (honorary), Institute of Mountain Sciences, Japan, and adjunct professor in AALTO University and University of Helsinki. He received his Diploma Engineer (M.Sc.) with honors in 1987, Dr.Ing. / Licentiate of Technology with honors in 1990, and Doctor of Technology with honors from Helsinki University of Technology in 1994, respectively. He obtained Dr.Sc. (forestry) Hons – SLU (Sweden) Faculty Board granted Honorary Doctorate based on my “outstanding contributions for assessment of forest resources” in October 2015.

His research interests cover Mobile laser scanning, Mobile lidar, point cloud processing, solving engineering problems with technology, feasibility of new sensors in applications, such as forestry, autonomous driving, road environment, convergence of robotics and sensors into surveying. Dr. Hyypä has more than 234 Web of Science Journal Articles with 8300 citations (currently 1300/year), H-index 49, 17500



citations and H-index 68 in Google Scholar. Dr. Hyypä is the recipient of the the first National Open Science Award in Finland in 2019, Remote Sensing best paper award based on 10 years best papers in 2019, Innovation Award (Laatu keskus 1/2015) given by President of Finland to Sharper Shape Oy, Marcus Wallenberg Prize Symposium 2011, First Innovation award of the Finnish Forest Mensurationist in 2010, First honorary mention of Talbert Abram Award (ASPRS 2009), Presidents Citation, ISPRS prize granted in ISPRS Congress 2008 for achievements in TC III.

Dr. Hyypä delivered many plenary/keynote presentations in international conferences, such as Map Africa 2009, Silvilaser 2010, German Mobile Mapping Days 2011, ICA 2011, Photogrammetric Week 2011, Marcus Wallenberg Prize Symposium 2011, SPAR Europe 2012, Photogrammetric Week 2013, Silvilaser 2013, Mobilas 2014, Swedish Cartographic Society, 2015, UPINLBS 2016, FIG Week 2017; 2019 Photogrammetric Week.

Dr. Hyypä is an active member of several scientific international organizations. He served as chairman of the Scientific Committees of Scandlaser 2003 in Umeå, Sweden, ISPRS Workshop on Laser Scanning 2007, and SilviLaser 2007 in Espoo. He served as member of scientific committee of 26 conferences, and organized 5 workshops between 1989-2017

Biography of Dr. CHEN Chi

Dr. CHEN Chi was born in Hubei Province, China, in 1989. He received his BSc and Ph.D. degree in Photogrammetry and Remote Sensing from Wuhan University in China, in 2010 and 2016, respectively. He works in the same department with Dr. YANG Bisheng and can ensure his time for the Commission affairs.

2. Financial support

(1) Commitment for ISPRS Activities of YANG Bisheng and CHEN Chi

Wuhan University will ensure Prof. Dr. YANG Bisheng and Dr. CHEN Chi for their time spent on preparation, planning, management and reporting of the Commission work, as well as travels for the symposium, Council meeting, Congress, Geospatial Weeks and workshops, during the ISPRS term 2022-2026. The State Key Laboratory of Information Engineering in Surveying, Mapping and Remote Sensing (LIESMARS), Wuhan University will provide financially support to Prof. Dr. YANG Bisheng and Dr. CHEN Chi for their duties in ISPRS Commission II during the ISPRS term 2022-2026.

(2) Commitment for ISPRS Activities of Prof. Dr. Hyypä Juha



The Finnish Society of Photogrammetry and Remote Sensing, representing Finnish as an Ordinary Member of the ISPRS, fully supports the nomination of Prof. Dr. YANG Bisheng for President and Prof. Dr. Hyypä Juha for Vice-President of the Technical Commission II (Photogrammetry) of ISPRS for the period of 2022-2026. Attached is the support letter for Prof. Dr. Hyypä Juha.

(3) ISPRS mid-term Symposium

Wuhan University, on behalf of ISPRS TC II, will host the ISPRS mid-term Symposium in 2024. The cost of the symposium will be covered by the sponsors, the registration fee, and the technical exhibit fee. Ten percent of all paid registration will be imposed to ISPRS. The Symposium will provide free of registration for Council and Honorary members, Chairperson of the Financial Commission and Editors of the ISPRS Journals, and also free accommodation for Council members.

2. Provisional plan for activities

Activities of the TC II will be organized according to the ISPRS Orange book. The contract with ISPRS for hosting TC II during 2022-2026 will be signed after the Nice Congress.

(1) Terms of Reference and Working Groups

The Terms of Reference, the structure of WGs of the TC will be prepared before the Nice Congress and will be discussed and revised by related experts and ISPRS officers. It will be submitted to the ISPRS Council for approving on the 1st Council meeting following the Nice Congress. The working groups will be organized during and after the Nice Congress.

(2) Conferences

The mid-term Symposium is planned to be held in later summer or early autumn of 2024 in China. Inter-disciplinary keynote papers and/or sessions will be included in the Symposia. The Commission will participate in the Geospatial week 2023 and 2025 with several workshops, which will be organized by the WGs. The TCP and Vice-TCP will provide necessary help to WG officers for organizing WG Workshops during the term according to the Orange Book. The TCP and Vice-TCP will encourage the WGs to organize sessions, seminars, tutorials in related conferences and the next Congress.

(3) Publications and reports

The TCP and Vice-TCP will publish the papers from the Symposium and Workshops as the Volumes of the International Archives of the Photogrammetry, Remote Sensing and Spatial Information Sciences and/or the ISPRS Annals of the Photogrammetry, Remote Sensing and Spatial Information Sciences. The TCP and Vice-TCP will seek high quality scientific papers suitable for publication in the ISPRS Journal of Photogrammetry and Remote Sensing and the ISPRS International Journal



for Geo-Information at the Symposia and Workshops, and provide, in consultation with the journal Editor-in-Chief, papers for at least one theme issue on topics related to Commission II during the four year period. Reports of events will be submitted the the Council and news items for publication in the ISPRS eBulletin will also be submitted.

(4) Benchmarking studies

Both proposed President and Vice-President will support the initiation of new benchmarking studies in the field of Commission II. As an example of joint activity of the candidates, a paper of recent joint benchmarking was published in 2018 in ISPRS Journal (Liang, X. et al. 2018. International benchmarking of terrestrial laser scanning approaches for forest inventories. ISPRS journal of photogrammetry and remote sensing, 144, pp.137-179). That paper was recently classified as ESI hot paper (belong to best 0.1% of papers in the field of Geoscience, based on Dec 2019). We aim to carry out new top-quality benchmarkings in two ways: 1) close collaboration of Wuhan University and FGI merged with global inputs, 2) stimulate WGs to carry out similar joint benchmarking studies.

(5) Liaison

The TCP and Vice-TCP will make efforts to promote international data sharing, benchmarking and cooperation. And will cooperate with international organisations such as IEEE GRSS, etc.

We would appreciate it if you review and consider this application.

With best wishes.

Sincerely yours,

SONG Chaozhi
President

Chinese Society for Geodesy Photogrammetry and Cartography



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Distinguished Young Scholars Professor (2017)
Yangtze River Scholar Distinguished Professor (2016)

Research Interests

Laser Scanning, Photogrammetry, Point clouds, Urban Remote Sensing, LBS & GIS applications.

Education

- Summer 2002 PhD in Photogrammetry and Remote Sensing, Wuhan University, P. R. CHINA.
Summer 1999 Master in Geomatics, Wuhan Technical University of Surveying and Mapping, P. R. CHINA.
Summer 1996 Bachelor in Geomatics, Wuhan Technical University of Surveying and Mapping, P. R. CHINA

Employment

- July.2013ff Professor, LIESMARS, Wuhan University, Wuhan, China
July.2012-June.2013 Visiting Professor, Department of Geography & Environment Management, University of Waterloo, ON, Canada
Nov.2007ff Professor, LIESMARS, Wuhan University, Wuhan, China
Nov.2006—Nov.2007 Associate Professor, LIESMARS, Wuhan University, Wuhan, China.
Oct.2002—Nov.2006 Post-doctoral Research Fellow at the GIS Division, Department of Geography, University of Zurich, Zurich, Switzerland.
Aug.2001—June.2002 Research assistant at the Department of Land Surveying and Geo-Informatics, Hong Kong Polytechnic University, Hong Kong.
Sept.2000—Aug.2001 Research assistant at the Research&Development Centre for Spatial Information and Network Communication, Wuhan University, P. R. China.
Sept.1999—Aug.2000 Research assistant at the State Key Laboratory of Information Engineering in Surveying, Mapping and Remote Sensing, Wuhan University, P. R. China.

Teaching Experience

Wuhan, China:

- Winter 2014-- Advanced point cloud processing, LIESMARS, Wuhan University
- Winter 2013 Integration of GIS, GPS, and Remote Sensing, LIESMARS, Wuhan University
- Winter 2011 Scientific Writing in English, LIESMARS, Wuhan University
- Winter 2011 Integration of GIS, GPS, and Remote Sensing, LIESMARS, Wuhan University
- Winter 2010 Scientific Writing in English, LIESMARS, Wuhan University
- Winter 2010 Integration of GIS, GPS, and Remote Sensing, LIESMARS, Wuhan University
- Winter 2009 Integration of GIS, GPS, and Remote Sensing, LIESMARS, Wuhan University
- Winter 2008 Integration of GIS, GPS, and Remote Sensing, LIESMARS, Wuhan University
- Winter 2007 Integration of GIS, GPS, and Remote Sensing, LIESMARS, Wuhan University
- Winter 2006 Spatial Information Theory, International School of Software, Wuhan University
- Winter 2006 Current GIS, LIESMARS, Wuhan University

Zurich, Switzerland:

- Spring 2006 Department of Geography, University of Zurich. GIS-I. Teaching assistant, with Prof. Dr. Robert Weibel and Dr. Ross Purves.
- Spring 2004 Department of Geography, University of Zurich. Project seminar, Map based interface functionality issues investigation.

Hong Kong:

- Spring 2002 Department of Land Surveying and Geo-Informatics, Hong Kong Polytechnic University. Spatial Data Modeling in GIS, Tutor, with Prof. Dr. Wenzhong Shi.
- Winter 2001 Department of Land Surveying and Geo-Informatics, Hong Kong Polytechnic University. Instructor, Surveying campaign.

Graduate Students Supervised

Completed supervision:

Master students(32) Miss Li Sun (2008), Mr. Xuechen Luan (2009), Mr. Du Zhou (2010), Miss. Lina Fang (2010), Miss. Yunfei Zhang (2011), Miss. Wan Lei (2011), Mr. Faqi Song (2011), Mr. Chi Chen(2012), Mr. Hengjia Song (2012), Mr. Zhexu Chen (2012), Miss. Zhixing Zhang (2012), Mr. Tao Tang (2013), Miss. Chaoyi Deng (2013), Miss. Linxiao Su (2014), Miss. Jinju Qian (2014), Mr. Boyu Zhang (2014), Mr. Gang Zhao (2016), Mr. Yichen Zeng (2016), Mr. Shuang Song (2017), Mr. Yifei Zhan (2017), Mr. Weichen Xiong (2016), Mr. Tong Zhou (2017), Mr. Penghui

Yuan (2018), Mr. Shaobing Zhang (2018), Mr. Yuan Liu (2018), Mr. Yang Liu (2018), Miss. Ting Han (2018), Miss. Mengmeng Shi (2018), Mr. Yiheng Song (2019), Mr. Xianghong Zhou (2019), Miss. Gege Huang (2019), Miss. Yuqi Yang (2019)

Ph.D students (12) Mr. Zhi Wang (2010), Mr. Zhen Wei (2012), Mr. Shaobo Jiang (2012), Mr. Xuechen Luan (2013), Mr. Wenxue Xu (2014), Ms. Lina Fang (2014), Miss. Yunfei Zhang (2015), Mr. Chi Chen (2016), Mr. Yuhu Zang (2016), Mr. Ronggang Huang (2017), Mr. Zhen Dong (2018), Mr. Pingbo Hu (2018)

Ongoing supervision:

Master students (9) Mr. Weitong Wu, Mr. Yangzi Cong, Mr. Shenlei Li, Miss. Ming Yu, Miss. Luqi Zhang, Mr. Xu Han, Miss. Wen Fan, Mr. Zheliang Zong, Mr. Yuzhou Zhou

Ph.D students (11) Miss. Xiaoxing Mi, Mr. Mao Tian, Mr. Ruizhuo Zhang, Miss. Wenxia Dai, Mr. Jianping Li, Mr. Fuxun Liang, Miss. Xiaorui Li, Mr. Zhuping Jiang, Mr. Aqil Tariq, Mr. Yuan Wang, Miss. Xue Ji

Research Awards

August	2019	Carl Pulfrich Prize for outstanding contribution in point clouds processing
October	2019	UAV based power line corridor monitoring and mapping, First Place Award by Chinese Society of Geomatics Photogrammetry and Cartography.
August	2016	Key Techniques and Applications of Navigation Map +, First Place Award by Hubei Province, P.R.C.
December	2009	Theory and Methodology for the Progressive Transmission of Spatial Data over the Internet, First Place Award by the Ministry of Education of P. R. C.
January	2007	Key Technologies for Modeling 3D Complex Objects and Relevant Applications, First Place Award by the Ministry of Education of P. R. C.
May	2006	ESRI Best Paper Award in GIS (first place), ASPRS.
June	2005	Distinguished Ph.D Dissertation Award of Hubei province, P. R. China.
May	2005	Nomination award of Top 100 Distinguished Ph.D dissertations of P. R. China.
May	2002	Distinguished Dissertation Award, Wuhan University, P. R. China.
	2003	Software registration: SpaceInfo (registration code: 2003SR2304).
May	1999	Distinguished Thesis Award, Wuhan Technical University of Surveying and Mapping, P. R. China.
May	1995	Ye Xuean Surveying Award, Wuhan Technical University of Surveying and Mapping, P. R. China.

Selected Publications

monograph Qingquan Li, **Bisheng Yang**, Wenzhong Shi, 2003. Three-Dimensional Spatial Information Technology. Wuhan University Press, 288p (In Chinese).

selected peer-reviewed journal papers

1. Mao Tian, **Bisheng Yang***, Chi Chen*, Ronggang Huang, and Liang Huo, 2019. HPM-TDP: An Efficient Hierarchical PatchMatch Depth Estimation Approach using Tree Dynamic Programming, *ISPRS Journal of Photogrammetry and Remote Sensing* (Accepted), Jun. 2019.
2. Yang Cui, Qingquan Li, **Bisheng Yang**, Wen Xiao, Chi Chen, Zhen Dong, 2019. Automatic 3-D Reconstruction of Indoor Environment With Mobile Laser Scanning Point Clouds. *IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing*, DOI: 10.1109/JSTARS.2019.2918937
3. Jianping Li, **Bisheng Yang***, Yangzi Cong, Lin Cao, Xiaoyao Fu, Zhen Dong, 2019. 3D Forest Mapping Using A Low-Cost UAV Laser Scanning System: Investigation and Comparison, *Remote Sensing* 11(6):717, DOI: 10.3390/rs11060717
4. Xin Shen, Lin Cao, **Bisheng Yang**, Zhong Xu, Guibin Wang, 2019. Estimation of Forest Structural Attributes Using Spectral Indices and Point Clouds from UAS-Based Multispectral and RGB Imageries, *Remote Sensing* 11(7):800, DOI: 10.3390/rs11070800.
5. Wenxia Dai, **Bisheng Yang***, Zhen Dong, Ahmed Shaker, 2018. A new method for 3D individual tree extraction using multispectral airborne LiDAR point clouds. *ISPRS Journal of Photogrammetry and Remote Sensing*, 144:400-411.
6. Li, Jianping, **Bisheng Yang***, Chi Chen, Ronggang Huang, Zhen Dong, Wen Xiao, 2018. Automatic registration of panoramic image sequence and mobile laser scanning data using semantic features. *ISPRS Journal of Photogrammetry and Remote Sensing*, 136:41-57.
7. Hu Pingbo, **Bisheng Yang***, Dong Zhen, 2018. Towards Reconstructing 3D Buildings from ALS Data Based on Gestalt Laws, *Remote Sensing*, 10.7: 1127.
8. Zhen Dong, **Bisheng Yang***, Fuxun Liang, Ronggang Huang, S Scherer, 2018. Hierarchical Registration of TLS Point Clouds Based on Binary Shape Context Descriptor. *ISPRS Journal of Photogrammetry and Remote Sensing*, 144, 61-79.
9. Zhen Dong, **Bisheng Yang***, P Hu, S Scherer*, 2018. An efficient global energy optimization approach for robust 3D plane segmentation of point clouds, *ISPRS Journal of Photogrammetry and Remote Sensing*, 137,

112-133.

10. Chi Chen*, **Bisheng Yang***, Shuang Song, 2018. Automatic Clearance Anomaly Detection for Transmission Line Corridors Utilizing UAV-Borne LIDAR Data. *Remote Sensing*. 10(4): 613-634. DOI: 10.3390/rs10040613
11. Chi Chen*, **Bisheng Yang***, Shuang Song, 2018. Calibrate Multiple Consumer RGB-D Cameras for Low Cost and Efficient 3D Indoor Mapping. *Remote Sensing*. 10(2): 328-357. DOI:10.3390/rs10020328.
12. **Bisheng Yang**, Yuan Liu, Zhen Dong, Fuxun Liang, Bijun Li, Xiangyang Peng, 2017. 3D local feature BKD to extract road information from mobile laser scanning point clouds, *ISPRS Journal of Photogrammetry and Remote Sensing*, 130:329-343
13. Zhen Dong, **Bisheng Yang**, Yuan Liu, Fuxun Liang, Bijun Li, Yufu Zang, 2017. A novel binary shape context for 3D local surface description, *ISPRS Journal of Photogrammetry and Remote Sensing*, 130:431-452.
14. **Bisheng Yang**, Zhen Dong, Yuan Liu, Fuxun Liang, Yongjun Wang. 2017. Computing multiple aggregation levels and contextual features for road facilities recognition using mobile laser scanning data. *ISPRS Journal of Photogrammetry and Remote Sensing*, 126:180-194
15. **Bisheng Yang**, Ronggang Huang, Jianping Li, Mao Tian, Wenxia Dai, Ruofei Zhong, 2016. Automated Reconstruction of Building LoDs from Airborne LiDAR Point Clouds Using an Improved Morphological Scale Space, *Remote Sensing*, 9:14.
16. **Bisheng Yang**, Ronggang Huang, Zhen Dong Yufu Zang Jianping Li, 2016. Two-step Adaptive Extraction Method for Ground Points and Breaklines from Lidar Point Clouds, *ISPRS Journal of Photogrammetry and Remote Sensing*, 119:373-389.
17. Chi Chen, **Bisheng Yang**, 2016. Dynamic Occlusion Detection and Inpainting of in Situ Captured Terrestrial Laser Scanning Point Clouds Sequence, *ISPRS Journal of Photogrammetry and Remote Sensing*, 119:90-107.
18. **Bisheng Yang**, Wenxia Dai, Zhen Dong, Yuan Liu, 2016. Automatic Forest Mapping at Individual Tree Levels from Terrestrial Laser Scanning Point Clouds with a Hierarchical Minimum Cut Method, *Remote Sensing*, 8(5):372-379.
19. **Bisheng Yang**, Zhen Dong, Fuxun Liang, Yuan Liu, 2016. Automatic Registration of Large-Scale Urban Scene Point Clouds Based on Semantic Feature Points, *ISPRS Journal of Photogrammetry and Remote Sensing*, 113, 43-58.
20. Hongchao Fan, **Bisheng Yang**, Alexander, Zip, Adam Rousell, 2016. A Polygon-based Approach for Matching OpenStreetMap Road Networks with

Regional Transit Authority Data, *International Journal of Geographical Information Science*, 30(4): 748-764.

21. **Bisheng Yang**, Yufu Zang, Zhen Dong, Ronggang Huang, 2015. An Automated Method to Register Airborne and Terrestrial Laser Scanning Point Clouds, *ISPRS Journal of Photogrammetry and Remote Sensing*, 109:62-76
22. **Bisheng Yang**, Yunfei Zhang, 2015. Pattern Mining for Conflating Crowdsourcing POIs and Road Networks, *International Journal of Geographical Information Science*, 29(5):786-805
23. **Bisheng Yang**, Chi Chen, 2015. Automatic Registration of UAV-Borne Sequent Images and LiDAR Data, *ISPRS Journal of Photogrammetry and Remote Sensing*, 101:262-274.
24. **Bisheng Yang**, Zhen Dong, Gang Zhao, Wenxia Dai, 2015. Hierarchical Extraction of Urban Objects from Mobile Laser Scanning Data, *ISPRS Journal of Photogrammetry and Remote Sensing*, 99:45-57.
25. **Bisheng Yang**, Wenxue Xu, Wei Yao, 2014. Extracting Building Footprints from Airborne Laser Scanning Point Clouds using a Marked Point Process, *GIScience and Remote Sensing*, 51(5): 555-574.
26. Qiuping Li, Hongchao Fan, Xuechen Luan, **Bisheng Yang**, Lin Liu, 2014. Polygon-based Approach for Extracting Multilane Roads from OpenStreetMap Urban Road Networks, *International Journal of Geographical Information Science*, 28(11):2200-2219.
27. **Bisheng Yang**, Lina Fang, 2014. Automated Extraction of 3D Railway Tracks from Mobile Laser Scanning Point Clouds. *IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing*, 7(12):4750-4761.
28. **Bisheng Yang**, Yufu Zang, 2014. Automated Registration of Dense Terrestrial Laser-Scanning Point Clouds Using Curves. *ISPRS Journal of Photogrammetry and Remote Sensing*, 95:109-121.
29. **Bisheng Yang**, Yunfei Zhang, Feng Lu, 2014. Geometric-Based approach for integrating VGI POIs and road networks, *International Journal of Geographical Information Science*, 28(1):126-147.
30. Haiyan Guan, Jonathan Li, Yongtao Yu, Cheng Wang, Michael Chapman, **Bisheng Yang**, 2014. Using mobile laser scanning data for automated extraction of road markings, *ISPRS Journal of Photogrammetry and Remote Sensing*, 87, 93-107.
31. **Bisheng Yang**, Xuechen Luan, Yunfei Zhang, 2014. A Pattern-Based Approach for Matching Nodes in Heterogeneous Urban Road Networks, *Transactions in GIS*, 18(5): 718-739.

32. Luliang Tang, Xia Zhang, Zihan Kan, **Bisheng Yang**, Qingquan Li, 2014. Spatial data Internet progressive transmission control based on the geometric shapes similarity, *International Journal of Control Automation and Systems*, 12(5):1110-1117
33. **Bisheng Yang**, Wenxue Xu, Zhen Dong, 2013. Automated Building Outlines Extraction from Airborne Laser Scanning Point Clouds, *IEEE Geoscience and Remote Sensing Letters*, 10(6):1399-1403.
34. Zhi Wang, Huiying Li, Lixin Wu, Qingquan Li, **Bisheng Yang**, 2013. Feature-Preserved Geometry Simplification of Triangular Meshes from LiDAR Sensor, *Sensor Letters*, 11 (5), 787-795
35. Qingquan Li, Xuan Sun, **Bisheng Yang**, Shaobo Jiang, 2013. Geometric structure simplification of 3D building models, *ISPRS Journal of Photogrammetry and Remote Sensing*, 84:100-113.
36. **Bisheng Yang**, Zhen Dong, 2013. A shape-based segmentation method for mobile laser scanning point clouds, *ISPRS Journal of Photogrammetry and Remote Sensing*, 81:19-30.
37. **Bisheng Yang**, Lina Fang, Jonathan Li, 2013. Semi-automated Extraction and Delineation of 3D Roads of Street Scene from Mobile Laser Scanning Point Clouds, *ISPRS Journal of Photogrammetry and Remote Sensing*, 79:80-93.
38. **Bisheng Yang**, Zhen Wei, 2013. Semi-automated Building Facade Footprint Extraction from Mobile Lidar Point Clouds, *IEEE Geoscience and Remote Sensing Letters*, 10(4):766-770.
39. **Bisheng Yang**, Yunfei Zhang, Xuechen Luan, 2013. A Probabilistic Relaxation Approach for Matching Road Networks, *International Journal of Geographical Information Science*, 27(2):319-338.
40. **Bisheng Yang**, Zhen Wei, Qingquan Li, Jonathan Li, 2012, Automated Extraction of Street-scene Objects from Mobile Lidar Point Clouds. *International Journal of Remote Sensing*, 33(18):5839-5861.
41. **Bisheng Yang**, Lina Fang, Qingquan Li, Jonathan Li, 2012, Automated Extraction of Road Markings from Mobile Lidar Point Clouds. *Photogrammetric Engineering & Remote Sensing*, 78(4):331-338.
42. **Bisheng Yang**, Xuechen Luan, Qingquan Li, 2011, Generating Hierarchical Strokes from Urban Street Networks Based on Spatial Pattern Recognition. *International Journal of Geographical Information Science*, 25(12):2025-2050.
43. **Bisheng Yang**, Xuechen Luan, Qingquan Li, 2010. An Adaptive Method for Identifying the Spatial Patterns in Road Networks, *Computers, Environment and Urban Systems*, 34:40-48.

44. **Bisheng Yang**, Robert Weibel, 2009. Editorial: Some Thoughts on Progressive Transmission of Spatial Datasets in the Web Environment, *Computers & Geosciences* 35(11):2175-2176
45. **Bisheng Yang**, Ross Purves, Robert Weibel, 2008. Variable-resolution Compression of Vector data, *GeoInformatica*, 12(3):357-376.
46. Qingquan Li, Zhi Wang, **Bisheng Yang**, 2008. Multi-resolution Representation of Digital Terrain Models with Terrain Features Preservation, *Science in China series E*,51(Supp.1):145-154
47. Yan, H., Weibel, R., **Bisheng Yang**, .2008. A Multi-parameter Approach to Automated Building Grouping and Generalization. *GeoInformatica*, 12(1): 73-89.
48. Xiaoqing Zuo, Qingquan Li, **Bisheng Yang**, Tao Chen, 2007. A View-dependent Method for the Multi-resolution Representation of Terrains with Roads Embedded, *International Journal of Remote Sensing*, 28(2):319-334.
49. **Bisheng Yang**, Ross Purves, Robert Weibel, 2007. Efficient Transmission of Vector Data over the Internet, *International Journal of Geographical Information Science*, 21(2):215-237.
50. Ross S Purves, Paul Clough, Christopher B Jones, Avi Arampatzis, Benedicte Bucher, David Finch, Gaihua Fu, Hideo Joho, Awase Khirni Syed, Subodh Vaid, **Bisheng Yang**, 2007. The design and implementation of SPIRIT: a spatially aware search engine for information retrieval on the Internet, *International journal of geographical information science*, 21(7): 717-745.
51. **Bisheng Yang**, Qingquan Li, Jianya Gong, 2006. A Robust and Rapid Algorithm for Generating and Transmitting Multi-resolution Three-dimensional Models, *Chinese Science Bulletin*,51(8):987-993.
52. **Bisheng Yang**, Wenzhong Shi, Qingquan Li, 2005. An Integrated TIN and Grid Method for Constructing Multi-resolution Digital Terrain Model, *International Journal of Geographical Information Science*, 19(10):1019-1038.
53. **Bisheng Yang**, Wenzhong Shi, Qingquan Li, 2005. A Dynamic Method for Generating Multi-Resolution TIN Models, *Photogrammetric Engineering & Remote Sensing (PE&RS)*, 71(8):917-927 (ESRI Best Paper Award).
54. **Bisheng Yang**, 2005. A Multi-resolution Model of Vector Map Data for Rapid Transmission over the Internet, *Computers & Geosciences*,31(5):569-578.
55. **Bisheng Yang**, Qingquan Li, Wenzhong Shi, 2005. Constructing

Multi-resolution Triangulated Irregular Network Model for Visualization, *Computers & Geosciences*, 31(1):77-86.

56. Wenzhong Shi, **Bisheng Yang**, Qingquan Li, 2003. An Object-oriented Data Model for Complex Objects in Three-dimensional Geographical Information Systems, *International Journal of Geographical Information Science*, 17(5): 411-430.
57. Qingquan Li, Yong Yan, **Bisheng Yang**, 2003. 3D Visualization of Underground Pipelines, *Journal of Wuhan University*, 28(3), 277-283 (in Chinese).
58. **Bisheng Yang**, Qingquan Li, Wenzhong Shi, 2003. Research on Multi-resolution Texture Model in 3D GIS, *Journal of Images & Graphics*, 8(3):328-334(in Chinese).
59. Jianhua Wan, Zhenfeng Pan, **Bisheng Yang**, 2002. Symbolization of Real Texture in 3D City Model, *Bulletin of Surveying and Mapping*, 3:52-55 (In Chinese).
60. **Bisheng Yang**, Qingquan Li, Baoyan Mei, 2000. Study of the Visualization of 3D City Model, *Acta Geodaetica et Cartographica Sinica*, 29(2):149-154(In Chinese).
61. **Bisheng Yang**, Qingquan Li, Deren Li, 1999. Building modeling for 3D City Model, *Geo-spatial Information Science*, 2(1):109-114.

Papers in Proceedings

- J. Li, **B. Yang**, Y. Cong, S. Li, and Y. Yue, 2019. Integration of a low-cost multisensory UAV system for forest application. *Int. Arch. Photogramm. Remote Sens. Spatial Inf. Sci.*, XLII-2/W13, 1027–1031,
- X. Mi, **B. Yang**, C. Chen, M. Yang, and Z. Dong, 2019. Automatic road structure detection and vectorization using MLS point clouds. *Int. Arch. Photogramm. Remote Sens. Spatial Inf. Sci.*, XLII-2/W13, 1069–1075,
- Pingbo Hu, Zhen Dong, Pengfei Yuan, Fuxun Liang, **Bisheng Yang**, 2018. Reconstruction of 3D models from point clouds with hybrid representation *International Archives of the Photogrammetry. Remote Sensing & Spatial Information Sciences Vol. 42 Issue 2*, p449-454.
- Yue Pan, **Bisheng Yang**, Fuxun Liang, Zhen Dong, 2018. Iterative Global Similarity Points: A Robust Coarse-to-Fine Integration Solution for Pairwise 3D Point Cloud Registration. *International Conference on 3D Vision (3DV)*, Verona, 2018, pp. 180-189.
- Chen Chi, Xianghong Zou, Mao Tian, Jianping Li, Weitong Wu, Y. Song, W. Dai, and **Bisheng Yang**, 2017. Low Cost Multi-Sensor Robot Laser Scanning System and its Accuracy Investigations for Indoor Mapping Application. *The*

International Archives of Photogrammetry, Remote Sensing and Spatial Information Sciences 42 (2017): 83.

Li, Jianping, **Bisheng Yang**, Weitong Wu, wenxia Dai, C. Chen, X. Zou, and M. Tian, 2017. 3D MOBILE MAPPING WITH A LOW COST UAV SYSTEM. The International Archives of Photogrammetry, Remote Sensing and Spatial Information Sciences 42 (2017): 127.

Yang Bisheng, Liu Yuan, Liang Fuxun, et al. 2016. Using mobile laser scanning data for features extraction of high accuracy driving maps. International Archives of the Photogrammetry, Remote Sensing & Spatial Information Sciences, 2016, 41.

Chen Chi, **Bisheng Yang**, Song Shuang, 2016. Low cost and efficient 3D indoor mapping using multiple consumer RGB-D cameras. International Archives of the Photogrammetry, Remote Sensing and Spatial Information Sciences. Volume XLI-B1: 69-174.

Chi Chen, **Bisheng Yang**, 2015. Automatic registration of UAV LiDAR data and sequent images using local pattern similarity. The International Symposium on Mobile Mapping Technology (MMT2015), Sydney Australia, 2015.12.08-2015.12.11.

Chi Chen, **Bisheng Yang**, 2014. A Graph Based Registration Method for UAV LiDAR Data and Sequent Images. ISPRS Technical Commission I Symposium, Sustaining Land Imaging: UAVs to Satellites, Denver, Colorado, USA, 2014.11.17-2014.11.20.

Chi Chen, **Bisheng Yang**, Chaoyi Deng, 2013. Registration of the panoramic image sequence to mobile laser scanning point cloud using linear features, The International Symposium on Mobile Mapping Technology, May 1-3, 2013, Taiwan.

Yunfei Zhang, **Bisheng Yang**, 2012. Automated matching crowdsourcing road networks using probabilistic relaxation, ISPRS Congress, August, 2012, Melbourne, Australian

Luan, X., **Bisheng Yang**, 2010. Generating Strokes of Road Networks Based on Pattern Recognition, 13th Workshop of the ICA commission on Generalisation and Multiple Representation, September, 2010, Zurich, Switzerland.

Bisheng Yang, Lina Fang, Jonathan Li, 2010, Detecting Road Markings from Mobile Lidar Point Clouds, ISPRS International Workshop on Terrestrial Lidar from Static to Mobile, October, 2010, Zhenzhou, China.

Bisheng Yang, 2008. Generating Progressively Vector Data Streaming for Adaptively Mobile Visualization, ISPRS 2008, Beijing

Bisheng Yang, Xuechen Luan, 2008. Patterns Recognition of road network for Level of Detail Representation, W2GIS 2008, December, 2008, Shanghai

Bisheng Yang, Qingquan Li, 2008. Acquisition, processing & application of traffic information in China, Asian-Pacific ITS Conference, July, 2008

Bisheng Yang, Ross Purves, Syed Awase Khirni and Robert Weibel, 2006. Web-based visualization tools for spatial information retrieval, *GISRUK 2006*, 5-7, April, UK.

Bisheng Yang, Qingquan Li, Xiaoqing Zuo, 2005. An algorithm for progressive transmission three-dimensional models over the Internet. *The Fourth International Symposium on Multispectral Image Processing and Pattern Recognition (MIPPR05)*, Wuhan, China, 31 October – 2 November, 2005.

Ross Purves, Syed Awase Khirni, **Bisheng Yang** and Robert Weibel, 2005. A Cartographic Visualization Interface for Spatial Information Retrieval. *XXII International Cartographic Conference 2005*, A Coruña, Spain.

Bisheng Yang, Ross Purves, Robert Weibel, 2004. Implementation of Progressive Transmission Algorithms for Vector Map Data in Web-based Visualization, *Proceedings XXth ISPRS Congress*, Istanbul, Turkey, 12-23 July 2004, Commission IV, pp.25-31.

Bisheng Yang, 2003. Compressed Irregular Triangulation Network for Level_of_Detail Visualization, *GeoComputation 2003*, U.K, Sept 8-10, 2003.

Qingquan Li, Xiaoqing Zuo, **Bisheng Yang**, 2002. 3D Highway Landscape Modeling and Visualization, *International Workshop on Visualization and Animation of Landscape*, Kunming, P. R. China. 26 – 28, February 2002.

Wenzhong Shi, **Bisheng Yang**, Qingquan Li, 2002. A view-dependent Level_of_Detail Model for Rendering in Three-dimensional GIS, *ISPRS Commission II, Symposium 2002*, Xi'an, P. R. China, August 20-23, 2002, 423-428.

Wenzhong Shi, **Bisheng Yang**, Qingquan Li, 2002. Integrated Dynamic Model for Multi-Resolution Data in Three-Dimensional GIS, *Geomatics '2002*, Ottawa, Canada, July 8-12, 2002, 148-153.

Bisheng Yang, Qingquan Li, Wenzhong Shi, 2001. Interactive Operation for 3D Surface Modeling, *Asia GIS '2001*, Japan, 2001.

Bisheng Yang, Qingquan Li, Deren Li, 2000. Building Model Creating and Storing in 3D Urban GIS, *Proceedings of International Society for Photogrammetry and Remote Sensing, XIX Congress*, Vol. XXXIII, Commission IV, Amsterdam, Netherlands, 1192-1198.

Qingquan Li, Wenzhong Shi, **Bisheng Yang**, 1999. 3D City Modeling Based on An Integrated Model, *Proceedings of International Symposium of Geoinformatics and Socioinformatic and Geoinformatics '99*. University of Michigan, June 19-21, 1999.

Qingquan Li, **Bisheng Yang**, Chenmin Li, 1999. 3D Urban Modeling from Data Acquisition to Visualization, *Proceedings of UM3'99, International Workshop on Urban 3D/Multi-Media Mapping*, Tokyo, Japan, Sept, 1999.

Qingquan Li, **Bisheng Yang**, 1998. Research on establishing 3D urban model from 2D GIS, *The Proceedings of International Conference of Spatial Information Science and Technology*, Wuhan, Dec, 1998.

Professional Services

Chair/Co-Chair Workgroup III of ISPRS Commission II (2016-2020), Workgroup of LiDAR and Laser Scanning, International Association of Geodesy (2010-)

Guest Editor Remote Sensing (2019), Environment and Planning B (2019), ISPRS Journal of Photogrammetry and Remote Sensing, Sept. 2018; Computers & Geosciences, October 2009.

Proceedings Editor ISPRS GSW Laser Scanning, Section Editor(s): J. Boehm, M. Rutzinger, **B. Yang**, M. Weinmann, B. Riveiro, W. Yao, June, 2019.

Scientific Committee ISPRS Geospatial Week (2017), ISPRS Workshop on Laser Scanning (2017, 2019), LIDAR&RADAR International Conference (2011), AGILE International Conference on Geographic Information Science (2008-), International Conference on Computer Vision in Remote Sensing (2012-)

Secretary Workgroup I, Commission II, ISPRS (2008-2012)

Reviewing IEEE Transactions on Geoscience and Remote Sensing, Computers Environment and Urban Planning, Remote Sensing of Environment, International Journal of Remote Sensing, International Journal of Geographical Information Science, Computers & Geosciences, Transactions in GIS, ISPRS Journal of Photogrammetry and Remote Sensing, Photogrammetry Engineering & Remote Sensing, GeoInformatica, IEEE Geoscience and Remote Sensing Letters, Remote Sensing, NSFC Grant.

Organize workshops/ conferences

ISPRS Workshop on Laser Scanning (Co-Chair, 2019)

Local organizer ISPRS GSW 2017 (Local organizer)

ISPRS Workshop on Laser Scanning (Chair, 2017)

Sino-German Workshop on Dynamic Maps (Chair, 2009)

1st International Conference on GIS for Transportation (Chair, 2008)

Research Grants

2019-2020 **PI:** MMS data quality improvement via multi-source data, Tallinn University of Technology, Estonia (**6 months, 120,000 Euros**)

- 2018-2019 **PI:** 3D Urban Semantic Modeling from Point Clouds, **Industrial research grant (2 years, 1.6 Million RMB).**
- 2018-2022 **PI:** The National Science Fund for Distinguished Young Scholars (**5 years, 4 Million RMB**).
- 2016-2020 **PI:** Air-ground collaborative reality capture and applications, The National Science Fund for Distinguished Young Scholars, Ministry of Science and Technology of China (**5 years, 20 Million RMB**).
- 2016-2020 **PI:** Ubiquitous Imagery-Point Clouds Modeling and Dynamic Multiple Representation, **National Natural Science Foundation of China (5 years, 3.8 Million RMB).**
- 2014-2017 **PI:** Automated registration of mobile laser scanning point clouds and panoramic imagery, **National Natural Science Foundation of China (4 years, 750,000 RMB).**
- 2012-2016 **PI:** 3D Modelling of Heritage by Multiple Sensors, **973 Basic Research Program Foundation of China (5 years, 4.5Million RMB).**
- 2012-2014 **PI:** Mapping and monitoring power lines corridors by UAV, **Industrial research grant (3 years, 3.8Million RMB).**
- 2011-2012 **PI:** Traffic Infrastructure Investigation by Laser Scanning, **NaveInfo Co.Ltd (2 years, 400,000 RMB).**
- 2010-2012 **PI:** 3D Rapid Mapping by UAV, **Industrial research grant (2 years, 300,000 RMB).**
- 2011-2013 **Co-PI:** Traffic Navigation by Real-time Traffic Data, **863 High-tech Program (3 years, 8.6Million RMB).**
- 2010-2013 **PI:** Modelling from Mobile LIDAR Point Clouds, **National Natural Science Foundation of China (3 years, 35,000RMB).**
- 2008-2012 **Co-PI:** Fusing Multiple Spatio-temporal Data for LBS, **National Natural Science Foundation of China (4 years, 1.5 Million RMB).**
- 2008-2011 **PI:** Integrating Dynamic Traffic Information for Navigation, **Natural Science Foundation of Hubei Province (3 years, 30,000RMB).**
- 2008-2011 **PI:** Modelling Level_of_Detail of Road Network, **National Natural Science Foundation of China (3 years, 39,000RMB).**
- 2007-2010 **PI:** 3D Modelling of Multiple Spatio-temporal Data, Outstanding Talented Project of Ministry of Education of China ((3 years, **50,000RMB**))
- 2007-2010 **PI:** Dynamic Traffic Information for Navigation and LBS, High-Tech 863 Program of China (3 years, **4.2 MillionRMB**)
- 2006-2008 **Co-PI:** Modeling and Visualization of Spatio-temporal Data, **National Natural**

Science Foundation of China (3 years, **380,000RMB**).

2006-2007 **Co-PI:** Spatial Information Services, **Huebi Province** (2 years, **200,000 RMB**).

2005-2006 **PI:** Algorithms for the progressive transmission of spatial data over the internet,
Research Council of University of Zurich (1 year, **93,365 CHF**).

2005-2007 **PI:** Dynamic multi-resolution representation of spatial data in Web environment,
National Natural Science Foundation of China (3 years, **250,000RMB**).

computer skills

Operating systems Windows, Linux, Ms-Dos.

Computer Languages Profound experience in Fortran, C++, Visual C++, Java, Visual Basic, OpenGL, DirectX, Javascript, PHP, JSP.

Databases Familiar with Foxpro, Sql Server, Oracle Spatial.

GIS and Images

Processing systems Familiar with ERDAS, PCI Geomatics, ArcGIS, IDL, Microstation.

languages

Chinese (mother language), English (fluent)



The Finnish Society of Photogrammetry and Remote Sensing

Thursday, February 6, 2020

Deputy Secretary General
Chinese Society for Geodesy Photogrammetry and Cartography
28 Lianhuachi West Road,
Beijing 100830,
China Tel: +86 10 63882323
By email: info@sbsm.gov.cn, bshyang@whu.edu.cn

SUBJECT: TECHNICAL COMMISSION II (Photogrammetry)

Dear Mr. PENG,

The Finnish Society of Photogrammetry and Remote Sensing, representing Finland as an Ordinary Member of the ISPRS, fully supports the nomination of Dr. Bisheng Yang for President and Dr. Juha Hyypä for Vice-President of the Technical Commission II (Photogrammetry) of ISPRS for the period of 2020-2024:

President: Dr. Bisheng Yang, Wuhan University, China

Vice-president: Dr. Juha Hyypä, Finnish Geospatial Research Institute FGI, Finland

If you have any questions, please do not hesitate to contact us.

Best regards,

A handwritten signature in blue ink, appearing to read 'Arttu Julin', is positioned below the text 'Best regards,'.

Arttu Julin
President, The Finnish Society of Photogrammetry and Remote Sensing

cc. Lena Halounová, Secretary General of ISPRS. isprs-sg@isprs.org .
Dr. Bisheng Yang, President of ISPRS TC II & Wuhan University, China, bshyang@whu.edu.cn

Curriculum vitae



PERSONAL INFORMATION

Name Juha Matti HYYPPÄ; Date of birth: 02 May 1964; Nationality: Finnish
Www: www.laserscanning.fi

EDUCATION AND DEGREES

Docentships **Adjunct Prof / Docent** in space technology, especially in remote sensing sensors, 20 December 1996, Helsinki University of Technology, HUT (Current AALTO University); **Adjunct Prof / Docent** in laser scanning and radar remote sensing, HUT (Current AALTO University)/Institute of Photogrammetry and Remote Sensing, 2004-2009; **Adjunct Prof/ Docent** in Remote Sensing of Forests, University of Helsinki, Department of Forest Resources, 2005-2010

Degrees **Dr.Sc. (forestry) Hons – SLU (Sweden)** Faculty Board granted Honorary Doctorate 1-3 October 2015 based on my **“outstanding contributions for assessment of forest resources”**. **Doctor of Technology with honors** (Helsinki University of Technology, current Aalto University), Department of Electrical Engineering, HUT), 18 January 1994, thesis: “Development and feasibility of airborne ranging radar for forest assessment “ (**excellent**); **Dr.Ing. / Licentiate of Technology with honors** (HUT) 5 June 1990, thesis: “Multichannel FFT scatterometer” (**excellent**), major remote sensing and space technology (**excellent**), minor circuit theory (**excellent**); **Diploma Engineer (M.Sc.) with honors** (HUT), 22 September 1987, thesis: “Development of an FM-CW radar for remote sensing” (**excellent**), major radio technology (**excellent**), minor information processing science (**excellent**).

CURRENT POSITIONS

Directorships: Director of NLS-FGI (Finnish Geospatial Research Institute of the National Land Survey of Finland), Remote Sensing Department, 45 employers (40 persons working on competitive external funding sources)

Professor: Professor of Remote Sensing and Photogrammetry at FGI
Distinguished Professor at Shinshu University (honorary), Institute of Mountain Sciences, Japan

SELECTED PREVIOUS POSITIONS

2014-2019 Director of Centre of Excellence in Laser Scanning Research, CoE-LaSR, (Leading more than 35 Doctors, ending 2019)

1998-2018 **Coordinator**, Coordinator of more than 10 European Science projects, 100+ partners globally.

2000-15 Professor, Head of Department, Finnish Geodetic Institute, Department of Remote Sensing and Photogrammetry. Group leader for 10 to 60 researchers.

2007-2017 **Senior Scientist in industry**, Blom-Kartta (Current Terratec Oy), Co-Founder and adviser of Sharper Shape Oy, Sharper Shape Group Inc (2013-2017), CSO of ArcticRED Oy and CTO of Solid Potato Oy , 2015- 2017, Technology transfer of forest lidar technology, developing laser based processing technology.

2015-2018 **Visiting Professor at Shinshu University**, Institute of Mountain Sciences, Japan (1-2 weeks per year, my groups is helping to give Laser Scanning & forestry education in Shinshu University, since it was missing before we started)

CAREER BREAKS

1990-1991: 8 months military service; 1997, 8 months taking care of my son Eric (3 kids), carer to my father (hemiplegia) during 2009-2018 (6-7 times per week; i.e. every day helping him for a while; limiting my international activities significantly).

PERSONAL RESEARCH FUNDING

2013-2019 Hyyppä has innovated and lead or co-lead project entities **during 2014-2018 with the value of 22.3M€ external funding (as PI/co-PI personal grants)** including Centre of Excellence, Academy STN, H2020/other framework programmes, EuroSDR/ISPRS, National defense programme, individual Academy, business Finland, EAKR, MAF, and other projects.

PI FOR INTERNATIONAL SCIENCE PROJECTS

EuroSDR, TLS Comparison, 2014-2017 with Xinlian Liang; EC/7FWP, Advanced_SAR, 2013-2017 (with Mika Karjalainen); Academy of Finland, Centre of Excellence in Laser Scanning Research, 2014-2019; EuroSDR, Road Environment Planning using Vehicle-Based Laser Scanning, 2008-12 (With Harri Kaartinen); EuroSDR, *Registration quality – Towards integration of photogrammetry and laser scanning, 2008-10 with Petri Rönholm*; EuroSDR, “Radiometric calibration of ALS intensity” (2007-2009), with Wolfgang Wagner, TU Wien; EuroSDR, “Building Extraction” (2003-2006), > 10 international partners (with Harri Kaartinen); EuroSDR “Tree extraction” (2004-2007) > 10 international partners from Europe, CAN, USA, Taiwan (with Harri Kaartinen); EU/IV Framework Program/CEO, Assessing forest stand attributes by integrated use of the high-resolution satellite imagery and laser scanner (HIGH-SCAN), 1998-2001; *Eureka, “Quality of laser scanning, especially in urban areas”, 4 international partners*; CSA/Tekes, “Applisarín”, co-operation with Atlantis Scientific, CAN and PFC, Canada; European Space Agency, AO and CAT-1 projects: AOT-SF.301, AO2-288, AOE-488, CAT-1 1422; CSA/NASDA/DLR, Principal investigator/co-investigator to ALOS, C-2, XSAR

SUPERVISION OF GRADUATE STUDENTS

- 30 persons from Centre of Excellence have got professorship during 2013-2019, The following of Centre of Excellence members I have educated (worked in my projects) have got professorships through CoE (18 individuals): Eija Honkavaara (FGI, 2020), Antero Kukko (FGI, 2018), Matti Vaaja (2017, Aalto), Mikko Vastaranta (2018, UEF), Harri Kaartinen, (FGI, 2015), Hannu Hyyppä (Aalto, 2013), Markus Holopainen (Univ Helsinki, 2011), Yi Lin (Beijing University, 2013), Jian Tang, Liang Chen, Jingbin Liu (Wuhan University, 2016-2017), Xinlian Liang, Xiaowei Yu, Yunsheng Wang, Matti Vaaja, Eetu Puttonen (Visiting professorship, Shinshu University), YuWei Chen (Shangdong University of Science and Technology, 2014), Sanna Kaasalainen (FGI, 2015), Ville Lehtola (Univ. Entschede, 2018).
- Currently co-supervising about 10 post graduate students

3. **Past Main Instructor (12 Dr.Sc./PhD thesis)** : Lingli Zhu, 2015, Anttoni Jaakkola, 2015, Xinlian Liang, 2013, Antero Kukko, 2013, Harri Kaartinen, 2013, Eero Ahokas, 2013, Eetu Puttonen, 2012, Mikko Vastaranta, 2012, Leena Matikainen, 2012, Mika Karjalainen, 2010, Xiaowei Yu, 2008, Eija Honkavaara, 2008
4. **Past Co-instructor (16 Dr.Sc./PhD thesis)**: JP Virtanen (2019), Joanne C. White (2019), Topi Tanhuanpää (2016), Ville Kankare (2014), Ninni Saarinen (2015), Matti Vaaja, 2014, Marcus Engdahl, 2013, Lauri Markelin (2013), Juha Suomalainen, (2012), Ants Vain, (2012), Petri Rönholm (2010), Manuela Hirschmugl (2008), Jochen Grandell, (2000), Hannu Hyyppä, (2000), Manuela Ziegler (AUT) and Hans Friedländer (GER) made PhD in the project coordinated by me and we co-authored several papers.
5. **Past Main instructor (7 Dr.Ing./Lic.Sc.thesis)**: Mika Karjalainen, Lic.Sc. (2008), Kirsi Karila, Lic.Sc. (2008), Harri Kaartinen, Lic. thesis (2008), Eero Ahokas, Lic. Sc. (2008), Lic.Sc. Juha Vilhomaa (2008), Leena Matikainen, Licentiate thesis (2005), Eija Honkavaara, Licentiate thesis (2000),

TEACHING ACTIVITIES

I have been lecturer of 41 courses in Finnish or foreign universities, and I have assistant/hourly instructor for 23 courses. I have written 10 text books on remote sensing, satellite engineering, geoinformatics and computer-aided design. I have written 5-6 chapters to text books.

ORGANIZING SCIENTIFIC MEETINGS

Chairman of the Scientific Committees: 1) Scandlaser, September 2003, Umeå, Sweden; 2) ISPRS Workshop on Laser Scanning 2007, Espoo, 3) SilviLaser 2007, Espoo. Member of Scientific/organizing Committee of 26 conferences between 1989-2017; Workshop Organizer, 5 times.

AWARDS, HONORS, IMPACTS AND PATENTS

Major awards	Among the group who obtained the first National Open Science Award in Finland, November 2019; Remote Sensing best paper award, based on 10 years best papers, 2019; Innovation Award, Laatukskus 1/2015, given by President of Finland to Sharper Shape Oy; Invited Speaker, Marcus Wallenberg Prize Symposium 2011; Innovation award, First Innovation award of the Finnish Forest Mensurationist, 2010 First honorary mention of Talbert Abram Award, ASPRS, 2009; Presidents Citation, ISPRS prize granted in ISPRS Congress 2008 for achievements in TC III; "Best research project of the year", Tekniikka ja Talous (Engineering and Economics) –journal recognition in 1989 for the project 'Microwave remote sensing instrumentation' Project Manager of the project.
Fellowships	Honorary/Distinguished Professor, Distinguished Professor, 2011-2014, Photogrammetry and Remote Sensing, Chinese Academy of Surveying and Mapping, Beijing, China, Honorary professor at Shandong University of Science and Technology, State Key Laboratory of Mining
Impacts	National Stand Level forest inventory based on laser scanning, about 20 M€ annual saving to Finland; Technology transferred to universities and companies: Today, half of the TOP-20 researchers (in terms of number of WoS papers in Laser scanning) in the world are from Finland. Technology has been transferred also to more than 20 companies in Finland. National Laser Scanning of Finland, Sweden, and Estonia with 10+M€ annual impacts, Co-Founder of 6 companies employing more than 50 persons. In 2020's individual tree and change detection with make a breakthrough in practice.

MERITS: EDITORSHIPS, KEYNOTES and TRUSTEESHIPS

234 Web of Science Journal Articles: **8300 citations** (currently 1300/year), H-index 49; Publications in Google Scholar, 17500 citations and H-index 68; <https://scholar.google.fi/citations?user=tKnUllcAAAAJ&hl=fi&oi=ao>

Photogrammetric Journal of Finland 2005-; Scandlaser 2003 conference proceedings; Workshop on Laser scanning and Silvilaser 2007 conference proceedings; ISPRS Commission VII papers for 2012 Congress Melbourne; Editor-In-Chief, 'A look at the Earth- Significance of Earth Observation for Finland', 1998, Tekes; **Guest Editor, ISPRS 100 years special issue on ISPRS Journal of Photogrammetry and Remote Sensing, Guest Editor for Remote Sensing Special issue "Laser Scanning in forests" Guest Editor for Remote Sensing Special Issue "Advances in Mobile Laser Scanning and Mobile Mapping", Guest Editor for Remote Sensing Special Issue "LS in built environment", Guest Editor for Forests "Terrestrial Point Clouds for forestry" Quest Editor for Remote Sensing Special Issue "Airborne Laser Scanning", Quest Editor for Remote Sensing Special issue Remote Sensing Techniques for Precision Forestry, Editorial Board Member, Forests, Editorial Board Member, Remote Sensing Section Board for Forest Remote Sensing**

Plenary/keynote presentations held in international conferences: Map Africa 2009, Silvilaser 2010, German Mobile Mapping Days 2011, ICA 2011, Photogrammetric Week 2011, Marcus Wallenberg Prize Symposium 2011, SPAR Europe 2012, Photogrammetric Week 2013, Silvilaser 2013, Mobilas 2014, Swedish Cartographic Society, 2015, UPINLBS 2016, FIG Week 2017; 2019 Photogrammetric Week

Finnish prime delegate, EuroSDR (European Spatial Data Research, European SHOK for Geospatial Data), 2012-, Finnish Delegate/Advisor in European Space Agency and European Commission; European Space Agency/EO/NPE 2001-2003, European Space Agency/Program Board of Earth Observation, 1994-95, European Space Agency Earth Observation Program, ESA EO Pot. Participants meetings, 1994-1995, European Commission CEO program, DISC-Committee, 1996; **Vice-President, Commission VII (Remote Sensing), International Society of Photogrammetry and Remote Sensing, ISPRS, 2008-2012; President, Commission II, European Spatial Data Research (previous OEEPE), 2004-2008; President, Commission II, European Spatial Data Research 2008-2010**, responsible for technology transfer project management of Commission II; **Working Group Co-Chair, ISPRS WG III/3 (2004-2008); Academy of Finland, Panel Member, Finnsight 2015, panel 7 (ICT); Member, National new elevation model, 2005-2006, MAF; Technology Programme Developer, Tekes (current BusinessFinland), National Funding Agency for Applied Research, National Remote Sensing Program GLOBE-2000, member and secretary of the planning committee, 1995; Member of LYNET Strategy Group in 2011 for making LYNET Strategy for years 2012-2016; Management Team Member, FGI, 2000-2014, NLS/FGI 2015-; Management Team Member, EuroSDR 2004-2010.**

95% papers published in open access, we produce open access datasets, national laser scanning data is no#1 Finnish open access data