Marc Pollefeys

Curriculum Vitae

ETH Zürich
Dept. of Computer Science
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http://www.inf.ethz.ch/personal/pomarc/

Education

1999	Ph.D.	Electr. Eng.	K.U.Leuven
1994	M.S.	Electr. Eng.	K.U.Leuven

Research interest

Computer vision, computer graphics, medical imaging, machine learning, robotics and augmented reality.

Professional experience

2018 -	**Director Microsoft MR & AI Zurich lab**
2007 -	**Full Professor, Computer Science Dept., ETH Zürich**
2016 - 2018	Director of Science, HoloLens, Microsoft
2009 -	Adjunct Professor, Computer Science Dept., University of North Carolina – Chapel Hill
2007	Visiting Associate Professor, Computer Science Dept., Stanford University
2005 - 2009	Associate Professor, Computer Science Dept., University of North Carolina – Chapel Hill
2002 - 2005	Assistant Professor, Computer Science Dept., University of North Carolina – Chapel Hill
1999 - 2002	Post-doctoral researcher, Dept. of Electrical Engineering, K.U.Leuven
1994 - 1999	Research Assistant, Dept. of Electrical Engineering, K.U.Leuven

Awards

2020	ICRA best robot vision paper finalist	2019	3DV best paper award (hon.mention)
2019	WACV best paper (hon. mention)	2019	MRSS/PIA best paper award
2016	WACV best paper award	2015	RSS best system paper award finalist
2013/14/15	Google Research Award	2013	Prix de Boelpaepe
2012	IROS best paper finalist	2007	CVPR Best Demo Award
2012	IEEE Fellow	2005	Packard Fellowship
2011, 1999	DAGM prize (best paper award)	2003	NSF CAREER award
2011, 2010	Google Research Award	1999	BARCO Scientific Prize (for Ph.D. dissertation)
2008	ERC Starting Grant	1998	David Marr prize in Computer Vision (ICCV best paper)

Professional activities

Member editorial board (selected)

2009 - 2014	Encyclopedia of Computer Vision
2006 - 2014	International Journal on Computer Vision (IJCV)
2005 - 2009	Transactions on Pattern Analysis and Machine Intelligence (PAMI)
2003 - present	Foundations and Trends in Computer Graphics and Computer Vision

Conference organizer

General Chair for Int. Conf. on Computer Vision (ICCV) 2019
General Chair for European Conf. on Computer Vision (ECCV) 2014
General Chair for Int. Conf. on 3D Data Imaging, Mod., Proc., Vis. and Transm. (3DIMPVT) 2012
Program Chair for IEEE Conf. on Computer Vision and Pattern Recognition (CVPR) 2009
General/Program Chair for 3D Data Processing Visualization and Transmission (3DPVT) 2006

Conference Program Committee member (major conferences only)

Int. Conf. on Computer Vision (ICCV) 2003/05/07/09/11 (program board), 2013 (area chair), 2015/17, 2019 (general chair), 2021

Int. Conf. on Computer Vision and Pattern Recognition (CVPR) 2003/04/06/07/08, 2009 (program chair), 2010 (area chair), 2011, 2012/13 (area chair), 2015/17
European Conference on Computer Vision (ECCV) 2002/04/06 (area chair), 2008 (area chair), 2010, 2012 (area chair), 2014 (general chair), 2020 (area chair)
Siggraph 2011 (technical papers committee), Siggraph Asia 2008 (technical papers committee)
Int. Conf. on Robotics and Automation 2016 (Associate Editor)

Keynote/invited speaker (since 2016)
IEEE ICIR21, ECCV20 W. on 4D Vision, ECCV20 W. on ACVR, ECCV20 W. on Holistic3D, AI4AEC2020, World.Minds 2019, ICCV2019 W. on 3DRiW, GCPR19, ICIP18, 3DV18, KCCV18, Sensors & Expo 2018, CCCV17, WACV17, Embedded Vision Summit 2017, 3DV16, ICPR16, ACCV16

Teaching

- undergraduate: Linear Algebra (2009-2016), Visual Computing (2008-2016, 2018-now), Computer Organization (2004-2005), seminar on computer graphics and vision (2008-2016)
- graduate: Computer Vision (2010-2016, 2018-now), 3D Vision (2004/2007/2008/2011-2016, 2018-now), Computational Photography (2008-2010) ...

Supervision

- Current postdocs: Lubor Ladicky, Martin Oswald, Viktor Larsson, Iro Armeni (with Prof. Daniel Hall), Daniel Barath
- Former postdocs: Prof. Zhaopeng Cui (Zhejiang U.), Prof. Torsten Sattler (Chalmers U./CTU), Vaggia Tsiminaki (IBM Research), Lisa Koch, Amael Delaunoy (Apple), Luca Ballan (Google), Jean-Charles Bazin (Apple), Kalin Kolev, Kevin Köser (GEOMAR), Prof. Friedrich Fraundorfer (TUGraz), Prof. Christopher Zach (Chalmers U), Roland Memisevic (20Bneurons), Prof. Gabriel Brostow (UCL/Niantic), Prof. Jean-Sebastien Franco (ENSIMAG/INRIA), Prof. Jan-Michael Frahm (UNC-Chapel Hill/FB), Prof. Philipos Mordohai (Stevens Institute)
- Current PhD students: Peidong Liu, Daniel Thul, Katarina Tóthová, Ian Cherabier, Mihai Dusmanu, Marcel Geppert, Taein Kwon, Zuoyue Li, Sandro Lombardi, Paul-Edouard Sarlin, Songyou Peng, Denys Rozumnyi, Silvan Weder, Luca Cavalli, Remi Pautrat, Cathrin Elich, Jonas Hein, Fangjinhua Wang.
- Graduated PhD students: Jingyu Yan, Prof. Seon Joo Kim (Yonsei University), Sudipta Sinha (Microsoft), Li Guan (WormpexAI), Changchang Wu (Waymo), Brian Clipp (Kitware), David Gallup (Waymo), Rahul Raguram (Apple), Roland Angst (ASUS), Georges Baatz (Google), Prof. Alexander Schwing (UIUC), Jens Puwein (VizRT), Prof. Gim Hee Lee (NUSingapore), Aparna Taneja (Google), Lionel Heng (DSO Singapore), Bernhard Zeisl (Google), Christian Haene (Google), Olivier Saurer (Astrivis), Petri Tanskanen (Astrivis), Lorenz Meier (Auterion), Dominik Honegger (Leica Geosystem), Federico Camposeco Paulsen (Facebook), Andrea Cohen (Facebook), Prof. Yagiz Aksoy (SFU), Nikolay Savinov (Deepmind), Johannes Schönberger (Microsoft), Pablo Speciale (Microsoft), Thomas Schoeps, Lukas Schneider (Daimler).

Projects and grants

Acquired significant competitive research funding from SNF, ERC, EU ICT, Innosuisse/CTI, IARPA, DARPA, NSF, DSO, Google, Microsoft, Nokia, HP, Qualcomm, Amazon, Leica/Hexagon, Toshiba, Yuneec, LiberoVision/VizRT and Novartis.

Publications

Over 300+ refereed publications (journals: 25+ @IJCV or IEEE PAMI, Conferences: 150+ @CVPR, ICCV or ECCV), h-index = 98, citations $>$ 36k (Google Scholar).

Awards

2016 WACV best paper award
2015 Outstanding Reviewer Award
2015 RSS best system paper award finalist
2015 Google Research Award
2014 Google Research Award
2014 NetExplo award
2013 Google Research Award
2013 Prix de Boelpaepe
2012 IROS Best Paper Award Finalist
2012 IROS Best Video Award Finalist
2012 HP Innovation Research Award
2012 IEEE Fellow
2011 DAGM prize (best paper award)
2011 Google Research Award
2010 Google Research Award
2008 ISPRS Best Poster Award
2008 CVPR Outstanding Reviewer Award
2008 ERC Starting Grant
2007 CVPR Best Demo Award
2005 Packard Fellowship
2003 NSF CAREER award
2001 CIPA Best Poster Award
1999 BARCO Scientific Prize (for Ph.D. dissertation)
1999 DAGM prize (best paper award)
1998 David Marr prize in Computer Vision (best paper award ICCV)
1989 Third prize in Flemish Mathematical Olympiades

Professional activities

- **Member editorial board**
  Encyclopedia of Computer Vision, 2009-2014.
  IPSJ Transactions on Computer Vision and Applications, 2009-2011.
  Intelligent Service Robotics, 2007-2014.
  International Journal on Computer Vision (IJCV), 2006-2014 (2014-present Honorary Board).
  Transactions on Pattern Analysis and Machine Intelligence (PAMI), 2005-2009.
  Foundations and Trends in Computer Graphics and Computer Vision, 2003-present.

- **Editor**
  Special Issue of the International Journal on Computer Vision (IJCV) on on Mobile Vision, Gang Hua, Yun Fu, Matthew Turk, Marc Pollefeys and Zhengyou Zhang. online first 2011.
  Special issue Computer Vision and Image Understanding (CVIU) on Virtual Representations and Modeling of Large-scale environments (VRML) Jan-Michael Frahm, Marc Pollefeys, Frank Dellaert, Jana Kosecka, Vol.116, Nr.1.
  3D Structure from Multiple Images, Marc Pollefeys, Luc Van Gool, Andrew Zisserman, Andrew Fitzgibbon (Eds.), Lecture Notes in Computer Science, Vol. 2018, Springer-Verlag.
  Special Issue of the International Journal on Computer Vision (IJCV) on Vision and Modelling of Dynamic Scenes, Andrew Fitzgibbon, Marc Pollefeys, Luc Van Gool, Andrew Zisserman (Eds.), Vol. 68, Nr. 1.
  3D Imaging for Safety and Security, Anreas Koschan, Marc Pollefeys, Mongi Abidi (Eds.), Kluwer/Springer, 2007.
  3D Image and Video Processing, Peter Eisert, Stefano Tubaro, Marc Pollefeys (guest editors), *Special Issue of EURASIP Journal on Image and Video Processing*

- **Conference organizer**
  General Chair for the International Conference on Computer Vision (ICCV) 2019
  General Chair for the European Conf. on Computer Vision (ECCV) 2014
  General Chair for the Int. Conf. on 3D Data Imaging, Modeling, Processing, Visualization and Transmission (3DIMPVT) 2012
  Program Chair for IEEE Conf. on Computer Vision and Pattern Recognition (CVPR) 2009
  General/Program Chair for 3D Data Processing Visualization and Transmission (3DPVT) 2006
  Workshop Chair for IEEE Conf. on Computer Vision and Pattern Recognition (CVPR) 2005

- **Workshop organizer**
  Workshop on Mobile Vision, G. Hua, Y. Fu, Z. Zhang, M. Turk, M. Pollefeys, K. Pully, 2013.
  Workshop on Mobile Vision, G. Hua, Y. Fu, Z. Zhang, M. Turk, M. Pollefeys, K. Pully, 2011.
  Dagstuhl Seminar on Outdoor and Large-Scale Real-World Scene Analysis, B. Rosenhahn, M. Pollefeys, F. Dellaert, JM. Frahm, 2011.
  Dagstuhl Seminar on Dynamic Maps, C. Brenner, W. Burgard, M. Pollefeys, C. Stiller, 2010.
  Workshop on Mobile Vision, G. Hua, Y. Fu, Z. Zhang, M. Turk, M. Pollefeys, 2010.
  Workshop on Computer Vision on GPU, J.-M. Frahm, M. Pollefeys, H. Bishof, 2010.
  Workshop on Computer Vision on GPU, J.-M. Frahm, M. Pollefeys, M. Shah, 2008.
  Workshop on Visual Representations and Modeling of Large-Scale environments (VRML), J.-M. Frahm, M. Pollefeys, F. Dellaert, J. Kosecka, 2007.
  Workshop on Omnidirectional Vision, Camera Networks and Non-traditional Sensors (OMNIVIS), C. Geyer, M. Pollefeys and X. Ying (organizers), Beijing, China, Oct 21, 2005.
  Workshop on Advanced 3D Imaging for Safety and Security, A. Koschan, M. Abidi and M. Pollefeys (organizers), June 25, 2005.
  Vision techniques for digital architectural and archaeological archives, H. Chikatsu, G. Fangi, M. Pollefeys, G. Zhou (organizers), 1-3 July 2003.
  Vision and Modelling of Dynamic Scenes, A. Fitzgibbon, M. Pollefeys, L. Van Gool, A. Zisserman (organizers), Copenhagen, Denmark, June 2, 2002.
  European Workshop on Structure from Multiple Images of Large-scale Environments (SMILE2), M. Pollefeys, L. Van Gool, A. Zisserman, A. Fitzgibbon (organizers), Dublin, Ireland, 2000

- **Special session organizer**
  Special Session at the Int. Symp. on 3D Data Processing Visualization Transmission 2004.

- **Conference/Workshop Program Committee member**
  Int. Conf. on Computer Vision (ICCV) 2003, 2005, 2007, 2009, 2011 (program board), 2013 (area chair), 2015
  Int. Conf. on Computer Vision and Pattern Recognition (CVPR) 2003, 2004, 2006, 2007, 2008, 2009 (program chair), 2010 (area chair), 2011, 2012 (area chair), 2013 (area chair), 2015
  European Conference on Computer Vision (ECCV) 2002, 2004, 2006 (area chair), 2008 (area chair), 2010, 2012 (area chair), 2014 (general chair)
  Siggraph 2011
  Int. Conf. on Robotics and Automation (ICRA) 2016 (associate editor)
  Int. Conf. on 3D Data Imaging, Modeling, Processing, Visualization and Transmission 2012 (general chair)
  Siggraph Asia 2008
  Asian Conf. on Computer Vision (ACCV) 2006, 2010 (area chair)
  International Conference on 3D Digital Imaging and Modeling 2001, 2003, 2005, 2007, 2009
  Workshop on Reconstruction and Modeling of Large-Scale 3D Virtual Environments (RMLE) 2010
  IEEE Embedded Computer Vision Workshop 2009
  2nd ACM/IEEE International Conference on Distributed Smart Cameras (ICDSC-08)
  Workshop on Omnidirectional Vision, Camera Networks and Non-traditional Sensors (OMNIVIS) 2007, 2009
  Workshop on Benchmarking Calibration, Orientation and Surface Reconstruction from Images 2005, 2007

Workshop Beyond Multiview Geometry: Robust Estimation and Organization of Shapes from Multiple Cues 2007
Int. Workshop on 3D Virtual Rec. and Vis. of Complex Architectures - 3D-Arch'2005, 2007
Indian Conference on Computer Vision, Graphics & Image Processing 2006 (ICVGIP)
ISPRS Commission III Symposium - Photogrammetric Computer Vision 2002, 2006
ISPRS Commission V Symposium 2002, 2006
International Conference on Pattern Recognition 2006 (ICPR) (Computer Vision Track)
Workshop on 25 Years of RANSAC 2006
IEEE Workshop on Three-Dimensional Cinematography (3DCINE'06)
Workshop on Dynamical Vision 2005, 2006

IEEE International Workshop on Projector-Camera Systems 2005, 2006 (ProCams)
Virtual Systems and Multi-Media 2005
International Workshop on Real-time 3D Sensors and Their Use 2004 (co-located with CVPR)
European Conference on Visual Media Production 2004, 2005
International Symposium on Visual Computing 2005
Workshop on Motion and Video Computing (MOTION) 2005
Euroconference on Virtual Archaeology - VAST 2001, 2003, 2004, 2005
Vision, Modeling and Visualization (VMV) 2004, 2005
International Symposium on 3D Data Processing Visualization Transmission 2004
ISPRS Congress 2004
Workshop on Higher-Level Knowledge in 3D Modeling & Motion Analysis 2003
EuroGraphics 2003
GRAPHITE 2003
ISPRS Conference on Photogrammetric Image Analysis 2003
Workshop on Vision and Modelling of Dynamic Scenes 2002
IEEE Workshop on Stereo and Multi-Baseline Vision 2001
International Symposium on Virtual and Augmented Architecture 2001
European Workshop on Structure from Multiple Images of Large-scale Environments 2000

- **Journal/Conference reviewer**
  International Journal on Computer Vision; IEEE Transactions on Pattern Analysis and Machine Intelligence; Computer Vision and Image Understanding; Image and Vision Computing Journal; Machine Vision and Applications; IEE Proceedings - Vision, Image and Signal Processing; Computer Graphics and Applications; The Journal of Visualization and Computer Animation; The Journal of Mathematical Imaging and Vision; IEEE Transactions on Image Processing; IEEE Transactions on Robotics and Automation; IEEE Transaction on Systems, Man and Cybernetics; IEEE Transactions on Circuits and Systems for Video Technology; IEEE Transactions on Visualization and Computer Graphics; IEEE Transactions on Biomedical Engineering; ISPRS Journal of Photogrammetry and Remote Sensing; Photogrammetric Engineering and Remote Sensing; International Journal of Shape Modeling; Pattern Recognition Letters; Journal of Oceanographic Engineering; Presence
  SIGGRAPH; Eurographics; Eurographics Rendering Workshop; I3D; American Control Conference

- **Panels/project review**
  ERC Computer Science Starting Grant panel (2014), FWO Computer Science panel (2010-2015), NSF Robotics and Human Augmentation/Computer Vision (3 panels), Computer Graphics.
  Army Research Office; Israeli Science Foundation; Indian Swiss Joint Research Programme; Canada Foundation for Innovation; EPSRC; Research Grants Council of Hong Kong; Kentucky Science & Engineering Foundation; Netherlands Organisation for Scientific Research; Research Office Limburgs Universitair Centrum, Österreichische Forschungsförderungsgesellschaft, Danish Agency for Science, Technology and Innovation, Qatar National Research Fund.

- **Invited conference/workshop speaker**
  International Conference on Pattern Recognition 2016 (**keynote**)
  Asian Conference on Computer Vision 2016 (**keynote**)

Embedded Vision Workshop, 2015 (**keynote**)
Workshop on Computer Vision for Vehicle Technology, 2015
Workshop on Semantics for Visual Reconstruction, Localization and Mapping, 2015
CeBIT 2015 (**keynote**)
REAL 2015
Benelux Conference on Artificial Intelligence 2014 (**keynote**)
Swiss IT Leadership Forum 2014
Digital Landscape Architecture 2014 (**keynote**)
4th IEEE Workshop on Consumer Depth Cameras for Computer Vision
ICCV Workshop on 3D Representation and Recognition (3dRR-13) (**keynote**)
ICCV Workshop on Wearable Computer Vision Systems (WCVS) 2013
International Workshop on Dynamic Shape Capture and Analysis (4DMOD) 2013
CVPR Workshop on Visual Analysis and Geo-Localization of Large-Scale Imagery 2013
IEEE IVMSP Workshop on 3D Image/Video Technologies and Applications 2013 (**keynote**)
ICRA Workshop on Semantic Perception, Mapping and Exploration (SPME) 2013
SPAR Europe 2012 (**keynote**)
Symposium on Geometry Processing 2012 (**keynote**)
Zurich.Minds 2011
OMNIVIS 2011
VipIMAGE 2011
EuroGraphics Symposium on Rendering 2011 (**keynote**)
ORASIS 2011 **keynote**
International Symposium on Visual Computing 2010 **keynote**
Workshop on Recent Trends in Computer Vision 2010
European Conference on Visual Media Production 2009 (**keynote**)
International Symposium of Robotics Research 2009
Meeting on Image Recognition and Understanding 2009 (**keynote**)
StratAG meeting 2009
Digital Media and its Applications in Cultural Heritage 2008 (**keynote**)
Int. Fall Workshop on Vision, Modeling and Visualization 2008 (U. Konstanz)
3D Data Processing Visualization and Transmission 2008 (GeorgiaTech)
3DTV-CON 2008 (**keynote**)
FIT-IT Visual Computing 2007 (**keynote**)
Dagstuhl Seminar on Visual Computing (**keynote**)
Workshop on Mathematical Methods in Computer Vision 2006 (Banff Int. Research Station)
Packard Fellows Meeting 2006
Vision colloquium 2006 (TU Graz)
Workshop on Comp. Vision for Interactive and Intelligent Environments 2005 (Univ. of Kentucky)
CVR Conference on Computational Vision in Biological and Machine Systems 2005 (York Univ.)
Int. Fall Workshop on Vision, Modeling and Visualization 2004 (Stanford Univ.)
Int. Symp. on 3D Data Processing, Visualization and Transmission 2004
Advanced Concepts for Intelligent Vision Systems 2004 (**keynote**)
DIMACS Workshop on Surface Reconstruction 2003
East-West Vision 2002
IMAGINA 2002 (**keynote**)
International Symposium on Virtual and Augmented Architecture 2001 (**keynote**)
Congres of the International Society on Photogrammetry and Remote Sensing 2000
Symposium Virtual Reality, Dutch Mathematisch Congres 2000
Asian Conference on Computer Vision 2000

- **Conference Courses and Summer/Winter Schools**
  Hamlyn Winter School on Medical Imaging 2016 (lecturer)
  International Computer Vision Summer School 2015 (lecturer)
  Learning Systems Summer School 2014 (lecturer)

Perception and Planning for Autonomous Driving Summer School 2014 (lecturer)
Autonomous Micro Aerial Vehicles: Design, Perception, and Control Summer School 2011 (lecturer)
International Computer Vision Summer School 2010 (lecturer)
Vision and Sport Summer School 2009 (lecturer)
Course on *Video-based rendering* at SIGGRAPH 2005 (co-organizer/lecturer).
Course on *3D modelling with a hand-held camera* at International Symposium on 3D Data Processing Visualization Transmission 2004 and Congres of ISPRS 2004 (organizer/lecturer).
Course on *3D Models from Photo and Video* at Siggraph 2003 (organizer/lecturer with Luc Van Gool)
Course on Interactive Geometric and Scientific Computations Using Graphics Hardware at Siggraph 2003 (lecturer)
Short course on *Multiple view geometry* CVPR2003 (co-organizer/lecturer with Andrew Zisserman)
Short course on *Multi-View Geometry* CVPR2001 (co-organizer/lecturer with Anders Heyden)
Course on *3D modelling with a hand-held camera* at Siggraph 2000, 2001 and 2002 (organizer/lecturer)
Course on *acquisition and rendering of surface lightfields/Image-based modeling* Siggraph 2001 and 2002 (lecturer)
Tutorial on *3D modelling from images* at ECCV2000 and 3DIM 2001, 2003 (organizer/lecturer)

- **Invited research presentations**
  Imperial College London (12/15), UC Berkeley (2/15), UCLA (2/15), Stanford (11/14), Google Zurich (5/14), EPFL (3/14), Saumsung UK (8/13), Yonsei U (6/13), Samsung DMC (6/13), SAIT (6/13), Seoul NU (6/13), KAIST (6/13), TU Vienna (5/13), Queen Mary University London (9/12), MPI-Saarbruecken (8/12), Oxford U (7/12), MERL (6/12), MIT (6/12), Leica Geosystems (5/12), Google Zurich (5/12), TU Graz (5/12), KULeuven (5/12), Stanford U (2/12), Willow Garage (2/12), HP Labs (2/12), Google (2/12) Qualcomm Research Vienna (11/11) , UC Berkeley (09/10), Nokia Research Palo Alto (09/11), Universiteit van Amsterdam (09/11), Lund University (04/11), T.U.Munich (02/11), Leica Geosystems (01/11), IRISA Rennes (12/10), Google Mountain View (12/10), HP Labs (12/10), EPFLausanne (10/10), Raindrop Geomagic (08/10), University of Basel (03/10), University of Tokyo (08/09), Nokia Research Palo Alto (02/09), Microsoft Research Redmond (11/08), Honda Research Mountain View (08/08), NavTeq Chicago (08/08), ETH Zürich (EE) (05/08), University of Zürich (GIS) (02/08), ETH Zürich (Statistics) (02/08), INRIA-Grenoble (02/08), Daimler (12/07), Université de Montréal (08/07), McGill (08/07) Google TechTalk (05/07), Stanford (05/07), University of California at San Diego (04/07), FX Palo Alto Lab (03/07), Navy Postgraduate School (03/07), Stanford (03/07), Industrial Light & Magic (03/07), Georgia Tech (01/07), Columbia University (12/06), New York University (12/06), Max Planck Institute - Saarbrücken (distinguished lecture) (09/06), ETH Zürich (03/06), INRIA-Grenoble (12/05), Microsoft Research Redmond (11/05), University of Washington (11/05), K.U.Leuven (07/05; 12/03; 12/02), Limburg University Center (07/05), Stanford University (03/05), General Electric CRD (02/05), Rensselaer Polytechnic Institute (02/05), John Hopkins University (02/05), University of California at Berkeley (11/04), Wright-Patterson Airforce Base/Wright State University (10/04), University of Illinois at Urbana Champaign (09/04), University of Oxford (08/04), Microsoft Research Cambridge (08/04), AlphaTech (08/04), University of Pennsylvania (GRASP seminar) (04/04), University of Maryland at College Park (04/04), Duke (03/04), Carneggie Melon University (RI Seminar) (02/04), UNC Research Laboratory for Archaeology (02/04), North Carolina State University (10/03), Technical University of Denmark (10/03), Siemens SCR (05/03), Princeton University (04/03), Sarnoff (04/03), MIT (11/02), GeorgiaTech (11/02), Imperial College (08/02), Max Planck Institute - Saarbrücken (06/02), University of North Carolina - Chapel Hill (02/02), Technical University Graz (01/02), UCLA (07/01), Prague Technical University (05/01), Chinese University of Hong-Kong (01/00), Erlangen-Nürenberg University (10/98), Gunma University (11/98), Oxford University (03/98).

- **Guest class lectures**
  Stanford ('07), GeorgiaTech ('02), ENST-Paris ('02), ETHZurich ('00).

- **Ph.D., M.S., HDR committee member**
  Adrien Bartoli, HDR, Univ. Blaise Pascal Clermont-Ferrand, 9 Jun. 2008

Joao Fayad, Ph.D., Queen Mary University London, 19 September 2012
Alex Flint, Ph.D., Oxford U, 5 July 2012
Manfred Klopschitz, Ph.D., TU Graz, 9 May 2012
Kalin Kolev, Ph.D., TU Munich, 31 January 2012
Amael Delaunoy, Ph.D., Universite de Grenoble, 2 December 2011
Gijs Dubbelman, Ph.D., Universiteit van Amsterdam, 6 September 2011
Olivier Teboul, Ph.D., Ecole Central (Paris), 1 June 2011
Kai Ni, Ph.D., GeorgiaTech, 21 April 2011
Olof Enqvist, Ph.D., Lund University, 8 April 2011
Manuel Yguel, Ph.D., INRIA-Grenoble, 11 December 2009
Patrick Labatut, Ph.D., Université Paris 7, 14 September 2009
Kevin Koeser, Ph.D., Univ. Kiel, 20 March 2009
Mathieu Perriollat, Ph.D., Univ. Blaise Pascal Clermont-Ferrand, 14 Nov. 2008
Daniel Martinec, Ph.D., CTU Prague, June 2008
Yasu Furukawa, Ph.D., UIUC, 7 Apr. 2008
Pau Gargallo, Ph.D., INRIA-Grenoble, 11 Feb. 2008
Daniel Wedge, Ph.D., University of Western Australia, 2007
Kemal Egemen Ozden, Ph.D., KULeuven, Oct./Nov. 2007.
Henrik Aanaes, Ph.D. Technical University of Denmark, 20 Oct. 2003.
Oscar Pizaro, Ph.D., MIT/WHOI, 13 Aug. 2004.
Srikumar Ramalingam, M.S., UCSC, Sept. 2004.
Jean-Sébastien Franco, Ph.D., INRIA-grenoble, 13 Dec. 2005
David Neil Ross McKinnon, Ph.D., University of Queensland, 2006

Patrick Pletscher, Ph.D., ETH, October 2012
Marcin Eichner, Ph.D., ETH, September 2012
Laurent Kneip, Ph.D., ETH, September 2012
Roland Angst, Ph.D., ETH, September 2012 (**advisor**)
Alessandro Prest, Ph.D., ETH, September 2012
Rahul Raguram, Ph.D., UNC, August 2012 (**co-advisor**)
David Gallup, Ph.D., UNC, August 2010 (**advisor**)
Brian Clipp, Ph.D., UNC, August 2010 (**advisor**)
Changchang Wu, Ph.D., UNC, August 2010 (**advisor**)
Tyler Johnson, Ph.D., UNC, 9 Nov. 2009
Li Guan, Ph.D., UNC, 14 Aug. 2009 (**advisor**)
Ahad Harati, Ph.D. ETH, 28 Aug. 2008
Hua Yang, Ph.D. UNC, 25 Jul. 2008
Seon Joo Kim,, Ph.D. UNC, 24 Jul. 2008 (**advisor**)
Sudipta Sinha, Ph.D. UNC, 4 Aug. 2008 (**advisor**)
Remo Ziegler, Ph.D., ETH, 23 May 2008
Eric Bennett, Ph.D., UNC, 22 Mar. 2007
Jingyu Yan, Ph.D., UNC, 28 Nov. 2006 (**advisor**)
Greg Coombe, Ph.D., UNC, 20 Nov. 2006
Scott Larsen, Ph.D., UNC, 27 Oct. 2006
Sang-Uok Kum, Ph.D., UNC, 5 May 2006
Kok-Lim Low, Ph.D., UNC, 16 Aug. 2005

- **Membership**

  Fellow of IEEE and member of ACM Siggraph.

- **Misc**
  member of Interuniversitäre Partnerschaft für Erdbeobachtung und Geoinformatik (2008-present)

Research Associate of the Research Laboratory for Archaeology (UNC) (2004-present)
Chair of ISPRS intercommission III/V workinggroup on Image Sequences (2000-2004/2004-2008).
Member of Honorary Committee Imagina 2003, 2004.

Courses taught

- Computer Vision, Fall 2011 (co-taught with Luc Van Gool)
- Linear Algebra, Fall 2011 (co-taught with Emmanuel Kowalski)
- Visual Computing, Fall 2011 (co-taught with Markus Gross)
- 3D Photography, Spring 2011 (co-taught with Kevin Köser)
- Computer Vision, Fall 2010 (co-taught with Vittorio Ferrari, Luc Van Gool)
- Linear Algebra, Fall 2010 (co-taught with Emmanuel Kowalski)
- Visual Computing, Fall 2010 (co-taught with Markus Gross)
- Visual Computing, Spring 2010 (co-taught with Markus Gross).
- Computational Photography and Video, Spring 2010
- Linear Algebra, Fall 2009 (co-taught with Daniel Kressner)
- Computational Photography and Video, Spring 2009 (co-taught with Gabriel Brostow).
- Visual Computing, Spring 2009 (co-taught with Markus Gross).
- Linear Algebra, Fall 2008 (co-taught with Daniel Kressner).
- 3D Photography, Fall 2008.
- Computational Photography and Video, Spring 2008 (co-taught with Gabriel Brostow)
- 3D Photography, Fall 2007.
- Computer Vision (Comp256), Spring 2006, Fall 2003.
- Recent advances in computer vision and image analysis (Comp255), Fall 2005.
- Computer Organization (Comp120), Spring 2005, Spring 2004.
- 3D Urban Modeling (Comp790-089), Fall 2006.
- 3D Photography (Comp290-089), Fall 2004.
- Multiple View Geometry (Comp290-089) , Spring 2003.
- Computer Vision (Inter-University Graduate Course with Luc Van Gool), Fall 2001.
- Summer School on Shape in Computer Vision and Graphics, ETHZürich, 2000 (lecturer).

Current Ph.D./M.S. student supervision

- **Andrea Cohen** (ETH), Fall 2010-present, multi-camera person tracking
- **Fabio Maninchedda** (ETH), Spring 2011-present, stereo and 3DTV
- **Christian Häne** (ETH), Spring 2011-present, scene modeling with priors
- **Lorenz Meier** (ETH), Spring 2011-present, Autonomous MAV swarms
- **Yagiz Aksoy**
- **Federico Camposeco**
- **Ian Cherabier**
- **Bastien Jacquet**
- **Peidong Liu**
- **Lorenz Meier**
- **Nikolay Savinov**
- **Johannes Schönberger**
- **Thomas Schöps**
- **Lukas Schneider**
- **Pablo Speciale**
- **Katarina Tóthová**

Postdoctoral advisees and senior researchers

- **Lubor Ladicki**, senior researcher, 01/13-present, current research topic: 3D semantic models
- **Torsten Sattler**, senior researcher
- **Martin Oswald**, postdoc

Graduated students and research group alumni

- **Jingyu Yan** (UNC), Ph.D. 2006, Articulated Non-rigid Shapes, Motions and Kinematic Chains From Video, currently with Amazon.
- **Seon Joo Kim** (UNC), Ph.D. 2008, Radiometric Calibration Methods from Image Sequences, currently assistant professor Yonsei University.
- **Sudipta Sinha** (UNC), Ph.D. 2008, Silhouettes for Calibration and Reconstruction from Multiple Views, currently with Microsoft Research.
- **Li Guan** (UNC), Ph.D. 2009, Multi-view Dynamic Scene Modeling, currently GE research.
- **Changchang Wu** (UNC), Ph.D. 2010, Geometry-driven feature detection for improving geometric reconstruction, currently with Google.
- **Brian Clipp** (UNC), Ph.D. 2010, Multi-Camera Simultaneous Localization and Mapping, currently with ARA.
- **David Gallup** (UNC), Ph.D. 2010, Efficient 3D Reconstruction of Large-Scale Urban Environments from Street-Level Video, currently with Google.

- **Roland Angst**, Ph.D. 2012, currently postdoc at Stanford.
- **Georges Baatz**, Ph.D. 2012, currently with Google.
- **Alexander Schwing**, Ph.D. 2013, currently at Univ. of Toronto.
- **Jens Puwein**, Ph.D. 2014, currently with VizRT.
- **Gim Hee Lee**, Ph.D. 2014, currently assistant professor at National University of Singapore (NUS).
- **Aparna Taneja**, Ph.D. 2014, currently with Google.
- **Lionel Heng**, Ph.D. 2015, currently at DSO Singapore.
- **Bernhard Zeisl**, Ph.D. 2015, currently at Google.
- **Petri Tanskanen**, Ph.D. 2016, currently at ETH/Astravis (start-up).
- **Olivier Saurer**, Ph.D. 2016, currently at ETH/Astravis (start-up).
- **Paul Merrell**, M.S., May 2007.
- **Sriram-Thirthala Venkata**, M.S., December 2005.
- **Jason Repko**, M.S., May 2005.
- **Jan-Michael Frahm**, post-doctoral researcher, 07/05-05/07. Currently assistant professor UNC.
- **Jean-Sébastien Franco**, 02/06-06/07, currently associate professor at the Université de Grenoble/INRIA.
- **Philippos Mordohai**, post-doctoral researcher, 08/05-07/07, currently assistant professor at Stevens Institute of Technology.
- **Gabriel Brostow**, post-doctoral research, 01/08-06/09, current assistant professor at University College London.
- **Roland Memisevic**, post-doctoral researcher, 02/10-12/10, currently assistant professor at University of Frankfurt.
- **Christopher Zach**, post-doctoral researcher, 01/08-12/11, currently post-doctoral researcher at MSR Cambridge.
- **Friedrich Fraundorfer**, post-doctoral researcher, 05/07-11/12, currently senior researcher TUMunich.
- **Kevin Koeser**, post-doctoral researcher, 04/09-04/13, currently senior researcher GEOMAR (Germany).
- **Luca Ballan**, postdoc, 04/09-09/14, currently with Apple.
- **Jean-Charles Bazin**, postdoc, 10/11-13, currently with Disney Research.
- **Kalin Kolev**, postdoc, 03/12-14, currently with Seene.
- **Amael Delaunoy**, postdoc, 04/12-15, currently with Apple.

Projects and grants

ETH

- **recent grants from EU, Google, Microsoft, ... not yet included**
- *Reconstructing Reflective Surfaces*, PI, 10/12-09/14, SNF, 100kCHF.
- *HP research award*, 2012, $75k.
- *Multi-view analysis of sports video II*, PI, 09/11-09/13, CTI-LiberoVision/VizRT, 350kCHF.
- *Qualcomm research gift*, 2011, $70k.
- *Nokia gift*, 2011, $90k.
- *Google award*, 2010-2011, $150k.
- *V-charge*, Co-PI (with PI Roland Siegwart, other partners VW, Bosch, University of Oxford, University of Parma, TU Braunschweig)
- *Terrain analysis, feature extraction and model deformation for cartographics generalisation and visualization*, Co-PI (PI Lorenz Hurni, Co-Pi Mark Pauly), SNF, 610kCHF.
- *Autonomous Vision-based Micro-helicopter*, PI (co-PI Roland Siegwart), 04/09-03/11, SNF, 210kCHF.
- *Visual cellphone localization using 3D models*,PI, 01/09-12/10, Nokia, $150k (175kCHF)
- *sFly: Swarm of Micro Flying Robots*, Co-PI (with Roland Siegwart (PI), Elias Kosmatopoulos (co-PI TU Crete), Agostino Martinelli (co-PI INRIA), Jean-Dominique Decotignie (co-PI CSEM)), 440k Euro (720kCHF)
- *Multi-Object Motion Grouping for General Embedded Computer Vision*, Co-PI (with Gabriel Brostow, Andrew Blake), 08/08-07/11, Microsoft, 300kCHF.
- *Multi-view analysis of sports video*, PI, 09/08-08/10, CTI-LiberoVision, 350kCHF.
- *4DVideo*, PI, 03/08-03/13, ERC starting grant, 1.75MEuro (2.6MCHF).

UNC

- *BASE-IT*, Co-PI (with Henry Fuchs (PI), Greg Welch), 10/07-9/10, ONR, $2,000,000.
- *Assist*, Co-PI (with Jan-Michael Frahm (PI), Svetlana Lazebnik), 8/07-12/08, DARPA, $500,000.
- *3D from Video*, PI, 8/07-12/07, Lockheed-Martin, $100,000.
- *Packard Fellowship for Science and Engineering*, recipient, The David and Lucile Packard Foundation, 11/05-10/10, $725,000.
- *VACEIII: 3D Content Extraction from Video Streams*, PI, DTO, 10/06-10/08, $1,000,000.
- *Transportable Computing Clusters for Real World Acquisition, Display, and Immersive Training*, Co-PI (with Henry Fuchs (PI), Greg Welch (Co-PI)), ONR, 04/06-06/07, $133,000.
- *UrbanScape*, UNC PI, DARPA, 03/05-03/08, UNC budget $1,300,000.
- *Geo*: Meshless wavelets and their application to terrain modeling*, Co-PI (with Jack Snoeyink (PI), Leonard McMillan, Wei Wang, Charles Chui, Wenjie He (Co-PIs)), DARPA, 03/05-02/10, $2,300,000.
- *Calibration and 3D modeling from pan-tilt-zoom camera networks*, PI, Siemens Ph.D. student support, 08/04-08/05, $31,000.

- *ITR: Converting 2D video to 3D with Applications to 3D-TV, Video Analysis and Compression*, PI, NSF, 08/03-07/06, $286,000 (including REU supplement).
- *UrbanScape seedling*, UNC PI, DARPA, 07/03-06/04, $120,000.
- *CAREER: Visual 3D Acquisition, Modeling and Rendering of the Real World*, PI, NSF, 02/03-02/08, $400,000.

K.U.Leuven

- *ATTEST - Advanced Three-dimensional TElevesion System Technology*, local project leader, European IST project, 03/02-02/04, local budget: approx. $200,000.
- *Micro-Mechanisms and Adaptation of Micro-Cameras to Planetary Exploration*, consultant , ESA project, 1/02-12/02, approx. $30,000.
- *Dynamic 3D multi camera setup*, personal equipment grant, FWO Fund for Scientific Research - Flanders, 01/02-12/02, approx. $27,500.
- *InViews - Interactive and Immersive Video from Multiple Images*, local project leader, European IST project, 12/01-5/04, approx. $350,000.
- *Combined geometric and image-based approaches to virtual and augmented reality*, co-principal investigator, Flemish FWO research project, 01/01-12/04, approx. $110,000
- *3D Murale - 3D Measurements & Virtual Reconstruction of Ancient Lost Worlds of Europe*, local project leader, European IST project, 11/00-10/03, approx. $290,000
- *BEYOND the Graphical User Interface*, local project leader, European ITEA project, 9/99-11/01, local budget: approx. $400,000
- *VirtErf - Virtual Heritage*, local project leader, Flemish STWW project, 9/99-8/01, local budget approx. $ 125,000
- *ROBUST - Payload Support for Planetary Exploration*, local project leader, ESA project, 3/99- .
- *Intelligent Mechatronic Systems*, workpackage leader, Belgian IUAP project, 01/97-12/01.
- *Combined geometric and image-based approaches to the acquisition of photo-realistic models from real-world 3D scenes*, competitive post-doctoral grant, recipient, FWO - Fund for Scientific Research - Flanders, 10/99-9/02.
- *Visual 3D reconstruction and recognition*, competitive Ph.D. grant, recipient, IWT - Institute for Promotion of Innovation by Science and Technology in Flanders, 01/95-12/98.

Publications (280+ refereed)

Journals

1. Y. Wang, X. X. Zhu, B. Zeisl, M. Pollefeys, "Fusing Meter-Resolution 4-D InSAR Point Clouds and Optical Images for Semantic Urban Infrastructure Monitoring", IEEE Transactions on Geoscience and Remote Sensing, accepted 2016
2. Y. Aksoy, T. Ayd?n, M. Pollefeys and A. Smolic, "Interactive High-Quality Green-Screen Keying via Color Unmixing", ACM Transactions on Graphics, accepted 2016.
3. O. Saurer, P. Vasseur, R. Boutteau, C. Demonceaux, M. Pollefeys, F. Fraundorfer, "Homography Based Egomotion Estimation with a Common Direction", **IEEE Trans. on Pattern Analysis and Machine Intelligence**, accepted 2016.

4. D. Tzionas, L. Ballan, A. Srikantha, P. Aponte, M. Pollefeys, J. Gall, "Capturing Hands in Action using Discriminative Salient Points and Physics Simulation", **International Journal of Computer Vision**, accepted 2016.

5. A. Schwing, T. Hazan, M. Pollefeys, and R. Urtasun, "Distributed Message Passing for Large Scale Graphical Models", **IEEE Trans. on Pattern Analysis and Machine Intelligence**, accepted.

6. L. Ladicky, S. Jeong, B. Solenthaler, M. Pollefeys, M. Gross, "Data-driven Fluid Simulation using Regression Forests", ACM Transactions on Graphics (SIGGRAPH Asia 2015).

7. O. Saurer, G. Baatz, K. Köser, L. Ladicky, M. Pollefeys, "Image Based Geo-Localization in the Alps", **International Journal of Computer Vision**, accepted 2015.

8. L. Heng, G.H. Lee, M. Pollefeys, "Self-calibration and visual SLAM with a multi-camera system on a micro aerial vehicle", Autonomous Robots (AURO), 2015.

9. G. H. Lee, B. Li, M. Pollefeys, F. Fraundorfer, "Minimal solutions for the multi-camera pose estimation problem", International Journal of Robotics Research, 2015.

10. A. Taneja, L. Ballan, M. Pollefeys, "Geometric Change Detection in Urban Environments using Images", **IEEE Trans. on Pattern Analysis and Machine Intelligence**, accepted 2015.

11. L. Heng, P. Furgale, and M. Pollefeys, "Leveraging Image-Based Localization for Infrastructure-Based Calibration of a Multi-Camera Rig", to appear in Journal of Field Robotics.

12. S. Holzer, S. Ilic, D. Tan, M. Pollefeys, N. Navab, "Efficient Learning of Linear Predictors for Template Tracking", **International Journal of Computer Vision**, May 2014.

13. D. Scaramuzza, M. Achtelik, L. Doitsidis, F. Fraundorfer, E. Kosmatopoulos, A. Martinelli, M. Achtelik, M. Chli, S. Chatzichristofis, L. Kneip, D. Gurdan, L. Heng, G. H. Lee, S. Lynen, L. Meier, M. Pollefeys, A. Renzaglia, R. Siegwart, J. Stumpf, P. Tanskanen, C. Troiani, S. Weiss, "Vision-Controlled Micro Flying Robots, from System Design to Autonomous Navigation and Mapping in GPS-denied Environments", IEEE Robotics and Automation Magazine, 2014.

14. L. Heng, D. Honegger, G. H. Lee, L. Meier, P. Tanskanen, F. Fraundorfer, and M. Pollefeys, "Autonomous Visual Mapping and Exploration With a Micro Aerial Vehicle", Journal of Field Robotics, 2014.

15. C.Zach, C. Haene, M. Pollefeys, "What Is Optimized in Convex Relaxations for Multi-Label Problems: Connecting Discrete and Continuously-Inspired MAP Inference", **IEEE Transactions on Pattern Analysis and Machine Intelligence**, accepted April 2013.

16. C. Zhang, J. Gao, O. Wang, P. Georgel, R. Yang, J. Davis, J.-M. Frahm, M. Pollefeys, "Personal Photo Enhancement using Internet Photo Collections", IEEE Trans. on Visualization and Computer Graphics, accepted April 2013.

17. J.-M. Frahm, J. Heinly, E. Zheng, E. Dunn, P. Fite-Georgel, M. Pollefeys , "Geo-registered 3D Models from Crowdsourced Image Collections", Journal of Geo-spatial Information, 2013.

18. R. Raguram, O. Chum, J.-M. Frahm, J. Matas, M. Pollefeys, "USAC: A Universal Framework for Random Sample Consensus", **IEEE Transactions on Pattern Analysis and Machine Intelligence**, (accepted Oct. 2012).

19. R. Angst, M. Pollefeys, "Multilinear Factorizations for Multi-Camera Rigid Structure from Motion Problems", **International Journal of Computer Vision**, (accepted August 2012).

20. J. Lim, J.-M. Frahm, M. Pollefeys, "Online Environment Mapping using Metric-topological Maps", International Journal of Robotics Research (IJRR), Special Issue on 3D Exploration Mapping, and Surveillance, (accepted August 2012).

21. O. Mac Aodha, A. Humayun, M. Pollefeys and G. Brostow, "Learning a Confidence Measure for Optical Flow", **IEEE Trans. on Pattern Analysis and Machine Intelligence**, (accepted Jul 2012).

22. F. Fraundorfer, L. Meier, P. Tanskanen, L. Heng, G. H. Lee, M. Pollefeys, "PIXHAWK: A Micro Aerial Vehicle Design for Autonomous Flight using Onboard Computer Vision", Autonomous Robots, (accepted Jan 2012)

23. W. Gaviao Neto, J. Scharcanskia, J.-M. Frahm, M. Pollefeys, "Hysteroscopy Video Summarization and Browsing by Estimating the Physician's Attention on Video Segments", Medical Image Analysis Journal, (accepted June 2011).

24. S. Thirthala, M. Pollefeys, "Radial Multi-focal Tensors (Applications to Omnidirectional Camera Calibration)", **International Journal of Computer Vision**, (published online June 2011).

25. G. Baatz, K. Köser, D. Chen, R. Grzeszczuk, M. Pollefeys, " Leveraging 3D City Models for Rotation Invariant Place-of-Interest Recognition", **International Journal of Computer Vision**, (accepted April 2011).

26. S. Sinha, J.-M. Frahm, M. Pollefeys, Y. Genc, Feature Tracking and Matching in Video Using Programmable Graphics Hardware, Machine Vision and Application, Vol. 22, Issue 1, January 2011.

27. L. Ballan, J. Puwein, G. Brostow, M. Pollefeys, Unstructured Video-Based Rendering: Interactive Exploration of Casually Captured Videos, ACM Transactions on Graphics (SIGGRAPH 2010).

28. M. Pollefeys, J.-M. Frahm, F. Fraundorfer, C. Zach, C. Wu, B. Clipp and D. Gallup, "Challenges in wide-area structure-from-motion", IPSJ Transactions on Computer Vision and Applications, Vol.2 (2010), pp.105-120.

29. S. J. Kim, D. Gallup, J.-M. Frahm, M. Pollefeys, "Joint Radiometric Calibration and Feature Tracking System with an Application to Stereo", Journal of Computer Vision and Image Understanding, Vol. 114, Issue 5, May 2010, Pages 574-582, Special issue on Intelligent Vision Systems 2010.

30. D. Scaramuzza, F. Fraundorfer, and M. Pollefeys, "Closing the loop in appearance-guided omnidirectional visual odometry by using vocabulary trees", Robotics and Autonomous Systems, 58(6):820827, 2010.

31. J.-M. Frahm, M. Pollefeys, S. Lazebnik, C. Zach, D. Gallup, B. Clipp, R. Raguram, C. Wu, T. Johnson, "Fast Robust Large-scale Mapping from Video and Internet Photo Collections", special issue 100 years of ISPRS of the ISPRS Journal of Photogrammetry and Remote Sensing, Vol. 65, Issue 6, November 2010.

32. L. Guan, J.-S. Franco, M. Pollefeys, "Probabilistic Multi-view Dynamic Scene Reconstruction and Occlusion Reasoning from Silhouette Cues", **International Journal of Computer Vision**, Vol. 90, Number 3, pp. 283-303, 2010.

33. S. Sinha and M. Pollefeys, "Camera Network Calibration and Synchronization from Silhouettes in Archived Video", **International Journal of Computer Vision**, Vol. 87, Number 3, pp. 266-283, 2010.

34. S. Sinha, D. Steedly, R. Szeliski, M. Agrawala, M. Pollefeys, "Interactive 3D Architectural Modeling from Unordered Photo Collections", ACM Transactions on Graphics (SIGGRAPH ASIA 2008), 27(5), December 2008, pp. 159:1-10.

35. M. Pollefeys, D. Nister, J.-M. Frahm, A. Akbarzadeh, P. Mordohai, B. Clipp, C. Engels, D. Gallup, S.-J. Kim, P. Merrell, C. Salmi, S. Sinha, B. Talton, L. Wang, Q. Yang, H. Stewenius, R. Yang, G. Welch, H. Towles, "Detailed Real-Time Urban 3D Reconstruction From Video", **International Journal of Computer Vision**, Vol. 78, Issue 2, Pages: 143 - 167, July 2008.

36. S.J. Kim, M. Pollefeys, "Robust Radiometric Calibration and Vignetting Correction", **IEEE Trans. on Pattern Analysis and Machine Intelligence**, vol. 30, no. 4, pp. 562-576, Apr. 2008.

37. J. Yan, M. Pollefeys, "A Factorization-Based Approach for Articulated Non-rigid Shape", Motion and Kinematic Chain Recovery From Video, **IEEE Trans. on Pattern Analysis and Machine Intelligence**, vol. 30, no. 5, pp. 865-877, May 2008.

38. S. Sinha, M. Pollefeys, Pan-Tilt-Zoom Camera Calibration and "High-Resolution Mosaic Generation, Computer Vision and Image", Understanding, 103(3), 170-183, 2006.

39. R. Yang, M. Pollefeys, "A Versatile Stereo Implementation on Commodity Graphics Hardware", Journal of Real-Time Imaging, Volume 11, Issue 1, February 2005, Pages 7-18.

40. M. Pollefeys, L. Van Gool, M. Vergauwen, F. Verbiest, K. Cornelis, J. Tops, R. Koch, "Visual modeling with a hand-held camera", **International Journal of Computer Vision** 59(3), 207-232, 2004.

41. R. Yang, M. Pollefeys, H. Yang, G. Welch, "A Unified Approach to Real-Time, Multi-Resolution, Multi-Baseline 2D View Synthesis and 3D Depth Estimation using Commodity Graphics Hardware", International Journal of Image and Graphics, Vol. 4, No. 4 (2004) 627-651.

42. K. Landzettel, K. Arbter, B. Brunner, B.-M. Steinmetz, M. Pollefeys, M. Vergauwen, R. Moreas, F. Xu, L. Steinicke, B. Fontaine, "A Micro-Rover Navigation and Control System for Autonomous Planetary Exploration", Advanced Robotics, Vol. 18, No.3, pp.285-314, 2004.

43. M. Pollefeys, L. Van Gool, M. Vergauwen, K. Cornelis, F. verbiest, J. Tops, "Image-based 3D Recording for Archaeological Field Work", Computer Graphics and Applications (CGA), vol. 23, no. 3., May/June 2003, pp. 20-27.

44. M. Pollefeys and L. Van Gool. "Visual modeling: from images to images", The Journal of Visualization and Computer Animation, **13**: 199-209, 2002.

45. M. Pollefeys and L. Van Gool. "From Images to 3D Models", Communications of the ACM, July 2002/Vol. 45, No. 7, pp.50-55.

46. M. Vergauwen, M. Pollefeys, L. Van Gool. "A stereo vision system for support of planetary surface exploration", special issue Machine Vision and Applications, Vol. 14(1), 2003, pp.5-14.

47. G. Van Meerbergen, M. Vergauwen, M. Pollefeys, L. Van Gool. "A Hierarchical Symmetric Stereo Algorithm Using Dynamic Programming", **International Journal on Computer Vision** 47(1/2/3): 275-285, 2002.

48. R. Koch, M. Pollefeys, L. Van Gool, "Realistic surface reconstruction of 3D scenes from uncalibrated image sequences", Journal of Visualization and Computer Animation, Vol. 11, pp. 115-127, 2000.

49. M. Pollefeys, R. Koch, M. Vergauwen, L. Van Gool. "Automated reconstruction of 3D scenes from sequences of images", ISPRS Journal Of Photogrammetry And Remote Sensing (55)4 (2000) pp. 251-267.

50. M. Pollefeys, R. Koch and L. Van Gool. "Self-Calibration and Metric Reconstruction in spite of Varying and Unknown Internal Camera Parameters", **International Journal of Computer Vision**, 32(1), 7-25, 1999.

51. M. Pollefeys and L. Van Gool, "Stratified Self-Calibration with the Modulus Constraint", **IEEE Transactions on Pattern Analysis and Machine Intelligence**, Vol 21, No.8, pp.707-724, 1999.

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(102 in top conferences ICCV, CVPR and ECCV, as in most areas of CS those conference are as important as journals)

52. L. Schneider, M. Cordts, T. Rehfeld, D. Pfeiffer, M. Enzweiler, U. Franke, M. Pollefeys, S. Roth, "Semantic Stixels: Depth is Not Enough", 2016 IEEE Intelligent Vehicles Symposium

53. U. Schwesinger, M. Bürki, J. Timpner, S. Rottmann, L. Wolf, L. M. Paz, H. Grimmet, I. Posner, P. Newman, C. Hne, L. Heng, G. H. Lee, T. Sattler, M. Pollefeys, M. Allodi, F. Valenti, K. Mimura, B. Göbelsmann, R. Siegwart, "Automated Valet Parking and Charging for e-Mobility Results of the V-Charge Project", 2016 IEEE Intelligent Vehicles Symposium.

54. N. Savinov, C. Haene, L. Ladicky, M. Pollefeys, "Semantic 3D Reconstruction with Continuous Regularization and Ray Potentials Using a Visibility Consistency Constraint", **CVPR 2016** (IEEE/CVF Int. Conf. on Computer Vision and Pattern Recognition).

55. D. Laptev, N. Savinov, J. Buhmann, M. Pollefeys, "TI-pooling: transformation-invariant pooling for feature learning in Convolutional Neural Networks", **CVPR 2016** (IEEE/CVF Int. Conf. on Computer Vision and Pattern Recognition).

56. S. Oh, M. Brown, M. Pollefeys, S. J. Kim, Do "It Yourself Hyperspectral Imaging with Everyday Digital Cameras", **CVPR 2016** (IEEE/CVF Int. Conf. on Computer Vision and Pattern Recognition).

57. T. Sattler, M. Havlena, K. Schindler, M. Pollefeys, "Large-Scale Location Recognition And The Geometric Burstiness Problem", **CVPR 2016** (IEEE/CVF Int. Conf. on Computer Vision and Pattern Recognition).

58. O. Saurer, G. H. Lee, M. Pollefeys, "Sparse to Dense 3D Reconstruction from Rolling Shutter Images", **CVPR 2016** (IEEE/CVF Int. Conf. on Computer Vision and Pattern Recognition).

59. B. Zeisl, M. Pollefeys, "Self-Calibration of RGB-D Sensors via Sparse Maps", IEEE ICRA (Int. Conf. on Robotics and Automation) 2016.

60. A. Romanoni, A. Delaunoy, M. Pollefeys, M. Matteucci, "Automatic 3D Reconstruction of Manifold Meshes via Delaunay Triangulation and Mesh Sweeping", IEEE WACV 2016. **best paper award**.

61. B. Zeisl, T. Sattler, M. Pollefeys, "Camera Pose Voting for Large-Scale Image-Based Localization", **ICCV 2015** (IEEE/CVF Int. Conf. on Computer Vision).

62. F. Camposeco Paulsen, T. Sattler, M. Pollefeys, "Non-Parametric Structure-Based Calibration of Radially Symmetric Cameras", **ICCV 2015** (IEEE/CVF Int. Conf. on Computer Vision).

63. A. Cohen, T. Sattler, M. Pollefeys, "Merging the Unmatchable: Stitching Visually Disconnected SfM Models", **ICCV 2015** (IEEE/CVF Int. Conf. on Computer Vision).

64. T. Sattler, M. Havlena, F. Radenovic, K. Schindler, M. Pollefeys, "Hyperpoints and Fine Vocabularies for Large-Scale Location Recognition", **ICCV 2015** (IEEE/CVF Int. Conf. on Computer Vision).

65. C. Sweeney, T. Sattler, M. Turk, T. Hollerer, M. Pollefeys, "Optimizing the Viewing Graph for Structure-from-Motion", **ICCV 2015** (IEEE/CVF Int. Conf. on Computer Vision).

66. M. Souiai, M. Oswald, Y. Kee, J. Kim, M. Pollefeys, D. Cremers, "Entropy Minimization for Convex Relaxation Approaches", **ICCV 2015** (IEEE/CVF Int. Conf. on Computer Vision).

67. T. Schoeps, T. Sattler, C. Haene, M. Pollefeys, "3D Modeling on the Go: Interactive 3D Reconstruction of Large-Scale Scenes on Mobile Devices", Proc. 3DV 2015.

68. P. Gohl, D. Honegger, S. Omari, M. Pollefeys, R. Siegwart, M. Achtelik, "Omnidirectional Visual Obstacle Detection using Embedded FPGA", IROS 2015 (IEEE/RSJ International Conference on Intelligent Robots and Systems).

69. C. Haene, T. Sattler, M. Pollefeys, "Obstacle Detection for Self-Driving Cars Using Only Monocular Cameras And Wheel Odometry", IROS 2015 (IEEE/RSJ International Conference on Intelligent Robots and Systems).

70. S. Xu, D. Honegger, M. Pollefeys, L. Heng, "Real-Time 3D Navigation for Autonomous Vision-Guided MAVs", IROS 2015 (IEEE/RSJ International Conference on Intelligent Robots and Systems).

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72. O. Saurer, M. Pollefeys, G. H. Lee, "A Minimal Solution to the Rolling Shutter Pose Estimation Problem", IROS 2015 (IEEE/RSJ International Conference on Intelligent Robots and Systems).

73. R. Bapst, R. Ritz, L. Meier, M. Pollefeys, "Design and Implementation of an Unmanned Tail-sitter", IROS 2015 (IEEE/RSJ International Conference on Intelligent Robots and Systems).

74. R. Karimi, C. Haene, M. Pollefeys, "Segment Based 3D Object Shape Priors", **CVPR 2015** (IEEE/CVF Int. Conf. on Computer Vision and Pattern Recognition).

75. N. Savinov, L. Ladicky, C. Haene, M. Pollefeys, "Discrete Optimization of Ray Potentials for Semantic 3D Reconstruction", **CVPR 2015** (IEEE/CVF Int. Conf. on Computer Vision and Pattern Recognition).

76. C. Haene, L. Ladicky, M. Pollefeys, "Direction Matters: Depth Estimation with a Surface Normal Classifier", **CVPR 2015** (IEEE/CVF Int. Conf. on Computer Vision and Pattern Recognition).

77. B. Resch, H. Lensch, O. Wang, M. Pollefeys, A. Sorkine-Hornung, "Scalable Structure from Motion for Densely Sampled Videos", **CVPR 2015** (IEEE/CVF Int. Conf. on Computer Vision and Pattern Recognition).

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83. A. Delaunoy, J. Li, B. Jacquet, M. Pollefeys, "Two Cameras and a Screen: How to Calibrate Mobile Devices?", 3DV 2014 (Int. Conf. on 3D Vision).

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