



## Tomas Pajdla

### Curriculum Vitae

<b>Titles</b>	Ing., Ph.D.		
<b>Personal</b>	Born in Prague, Czech Republic on May 10, 1969.		
<b>Address</b>	Ukrajinska 899/9, 101 00 Prague 10, Czech Republic.		
<b>E-mail</b>	pajdla@cvut.cz	<b>Tel.</b>	+420-604-236-022
<b>Res. ID</b>	K-7954-2013		
	<i>WOS – Thomson Web of Science</i>	<i>Google Scholar</i>	<i>Scopus</i>
	h-index: 13    Citations: 1013	h-index: 39    Citations: 9108	h-index: 17
<b>Work</b>	Czech Technical University in Prague ( <a href="http://www.cvut.cz">www.cvut.cz</a> ) <ul style="list-style-type: none"> <li>Assistant Professor at the Faculty of Electrical Engineering, Department of Cybernetics (<a href="http://cyber.felk.cvut.cz">cyber.felk.cvut.cz</a>) Head of the Geometry of Vision and Robotics group</li> <li>Distinguished Researcher at the CIIRC – Czech Institute of Informatics, Robotics and Cybernetics (<a href="http://ciirc.cvut.cz">ciirc.cvut.cz</a>) Head of the Applied Algebra and Geometry group</li> </ul>		
<b>Education</b>	1992	Ing. (MSc.) in Electrical Engineering, Czech Technical University in Prague Thesis: Geometric Model Construction from Sequences of Range Images.	
	2003	Ph.D. in Electrical Engineering, Czech Technical University in Prague Thesis: Stereo Geometry of Non-Central Cameras.	
<b>Career</b>	1994—1995	Research Assistant, Prof. L. Van Gool, Katholieke Universiteit Leuven	
	1995—now	Assistant Professor, Faculty of Electrical Engineering, Czech Technical University in Prague	
	1996—2015	Partner and Chief of the Research and Development in Neovision s.r.o.	
	1998/10-12	Visiting Researcher, Prof. W. Kropatsch, Technical University of Vienna	
	2009/09	Visiting Researcher, Prof. R. Hartley, Australian National University	
	2014/12-01	Visiting Researcher, Prof. A. Sugimoto, NII Tokyo	
	2014—now	Distinguished Researcher, CIIRC of the CTU in Prague	
	2015—now	Visiting Associate Professor, NII Tokyo	

T. Pajdla is a scholar and teacher in technical sciences of Computer Vision, Robotics and Machine Learning. He is an assistant professor at the Faculty of Electrical Engineering, a distinguished researcher at the Czech Institute of Informatics, Robotics and Cybernetics at the CTU in Prague, and a visiting Associate Professor at the National Institute of Informatics, Tokyo.

T. Pajdla works in geometry, algebra and optimization of computer vision and robotics, 3D reconstruction from images, and visual object recognition. He published more than 100 works in journals and conferences and is known for his contributions to geometry of cameras, image matching, 3D reconstruction, visual localization, camera and hand-eye calibration, and algebraic methods in computer vision. His works received prizes at OAGM, BMVC, ACCV and ICCV conferences.

T. Pajdla is reading lectures in geometry of computer vision and robotics at the Czech Technical University in Prague and at the Charles University in Prague and is supervising bachelor, master and doctoral students. His students continue careers at the University of Oxford, ETH Zurich, Stanford University, INRIA/ENS, TU Delft, AIT Vienna, Microsoft Research, CTU in Prague, and in the Academy of Sciences of the Czech Republic. Their theses received prizes from the European Research Consortium for Informatics and Mathematics, Czech Society of Cybernetics and Informatics, and CTU in Prague.

T. Pajdla is a member of the editorial boards of IEEE Transactions on Pattern Analysis and Machine Intelligence, Computer Vision and Image Understanding, Foundations and Trends in Computer Graphics and Vision, the Board of European Conference on Computer Vision. He was a Program Chair of the European Conference on Computer Vision 2004 and 2014 and an area chair of ICCV, CVPR, ECCV, ACCV and BMVC conferences.

T. Pajdla has an extensive experience in participating in EU and national research grants and projects. He was responsible for seven EU FP5/6/7 projects at the CTU in Prague and was a principal investigator of three projects from the Grant Agency and the Technology Agency of the Czech Republic.

T. Pajdla has been developing and leading the development of industrial applications of computer vision and machine learning for the past 20 years. He led the research and development at an SME Neovision s.r.o., and was working with Daimler, Leica, Intel, EADS, and Skoda Auto.

## Research

T. Pajdla is known for making notable contributions to computer vision and robotics research.

1. He introduced the stereo geometry of non-perspective and generalized non-central cameras [1,2]. It sparked a new subfield studying geometries of generalized cameras in computer vision and had impact on applied mathematics. Recently, geometry of non-central projections started to play an important role in modeling geometry of and developing algorithms for modern rolling shutter imaging sensors [80].
2. He contributed to solving the image matching problem by formulating and initiating the research on solving the stereo matching problem under practical conditions [5]. This work has received global attention with more than 3000 citations on Google Scholar. Recently, this work followed into developing efficient methods for image based localization [14].
3. He developed specializations of computational algebraic geometry to engineering problems [9,11,12]. With his students, he presented a number of new and very efficient solvers of special polynomial systems that found many applications in modeling 3D scenes from photographs [7,10]. His Ph.D. student Z. Kukelova received the ERCIM 2015 Cor Baayen Award for original scientific results on the border of applied mathematics and engineering.

## Publications

T. Pajdla has been publishing his work in top journals and conferences. He published more than 15 works in impacted journals (IEEE PAMI, IJCV, CVIU), and more than 40 works in highly selective conferences (ICCV, CVPR, ECCV). Many more works have been published in MVA, ACCV, BMVC, OAGM, OMNIVIS, CVWW, and EPSC.

## Awards and prizes

1998	T. Werner, T. Pajdla, V. Hlavac. Oriented projective reconstruction. 1998 OAGM – Oesterreische Gemeinschaft	The best scientific paper award. Author.
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	fuer Mustererkennung	
2002	J. Matas, O. Chum, M. Urban, and T. Pajdla. Robust wide baseline stereo from maximally stable extremal regions.	The best scientific paper award. Author.
2005	CMP Team: 3D location estimation from uncalibrated 2D images	The 2 <sup>nd</sup> place at the IEEE International Conference on Computer Vision 2005 Vision Contest. Advisor.
2009	O. Sychrovsky. Car-to-obstacle distance estimation from a sequence of images supervised. MSc thesis.	Porsche Engineering Award 2009, 3 <sup>rd</sup> place. Advisor.
2012	M. Havlena. Incremental Structure from Motion for Large Ordered and Unordered Sets of Images.	CSKI Antonin Svoboda Prize for the best Ph.D. work in 2012. Advisor. ( <a href="http://www.cski.cz">www.cski.cz</a> ).
2013	T. Schilling, T. Pajdla. Euclidean Upgrade from a Minimal Number of Segments. 2013 OAGM – Oesterreiche Gemeinschaft fuer Mustererkennung	The best scientific paper award. Author. ( <a href="http://oagm2013.iis.uibk.ac.at">oagm2013.iis.uibk.ac.at</a> ).
2013	Z. Kukelova. Algebraic Methods in Computer Vision. Ph.D. thesis.	CSKI Antonin Svoboda Prize for the best Ph.D. work in 2013. Advisor. ( <a href="http://www.cski.cz">www.cski.cz</a> )
2013	M. Bujnak. Algebraic Solutions to Absolute Pose Problems. Ph.D. thesis.	Finalist of the CSKI Antonin Svoboda Prize for the best Ph.D. work in 2013. Advisor. ( <a href="http://www.cski.cz">www.cski.cz</a> )
2014	Z. Kukelova, M. Bujnak, J. Heller, T. Pajdla. Singly-Bordered Block-Diagonal Form for Minimal Problem Solvers. ACCV 2014.	The best paper honorable mention award. Author. ( <a href="http://www.accv2014.org/">http://www.accv2014.org/</a> )
2015	Z. Kukelova. Algebraic Methods in Computer Vision. Ph.D. thesis.	2015 Cor Baayen Award. Advisor. ( <a href="http://cordis.europa.eu/news/rcn/128035_en.html">cordis.europa.eu/news/rcn/128035_en.html</a> )

### Invited lectures

2003	C. Geyer, T. Pajdla, K. Daniilidis. ICCV 2003 Course on Omnidirectional Vision. International Conference on Computer Vision, Nice. October 11, 2003.
2011	T. Pajdla. PROVisG MARS 3D Challenge. CVVT:E2M 2011 – Computer Vision in Vehicle Technology – from Earth to Mars, Queenstown ( <a href="http://adas.cvc.uab.es/CVVT2011/">adas.cvc.uab.es/CVVT2011/</a> )
2012	T. Pajdla. Towards EU Mars Mission- PROVISG and PROVISCOUT planetary robotics. CVVT:E2M 2012 – Computer Vision in Vehicle Technology – from Earth to Mars, Firenze ( <a href="http://adas.cvc.uab.es/CVVT2012/">adas.cvc.uab.es/CVVT2012/</a> )
2013	T. Pajdla. PROViDE Planetary Robotics. CVVT:E2M 2013 – Computer Vision in Vehicle Technology – from Earth to Mars, Sydney ( <a href="http://adas.cvc.uab.es/CVVT2013/">adas.cvc.uab.es/CVVT2013/</a> )
2014	T. Pajdla. 3D Reconstruction on Mars. CVVT:E2M 2015 – Computer Vision in Vehicle Technology – from Earth to Mars, Zurich ( <a href="http://adas.cvc.uab.es/CVVT2014/index787c.html?page_id=11">adas.cvc.uab.es/CVVT2014/index787c.html?page_id=11</a> )
2015	T. Pajdla. 3D Reconstruction on Planets. CVVT:E2M 2015 – Computer Vision in Vehicle Technology – Boston ( <a href="http://adas.cvc.uab.es/CVVT2015/">adas.cvc.uab.es/CVVT2015/</a> )
2015	T. Pajdla. Solving Minimal Problems for 3D Reconstruction from Images. PIA15 Photogrammetric Image Analysis, ISPRS 2015. Munich ( <a href="http://www.pf.bgu.tum.de/isprs/pia15/">www.pf.bgu.tum.de/isprs/pia15/</a> )

2015	T. Pajdla. 3D Reconstruction from Photographs Principles & Applications. IEEE 14th IAPR International Conference on Machine Vision Applications (MVA), 2015, Tokyo.
2015	T. Pajdla. Minimal Problems in Computer Vision – What works and what does not. Meeting on Algebraic Vision 2015, Berlin ( <a href="http://www3.math.tu-berlin.de/combi/AlgebraicVision/">www3.math.tu-berlin.de/combi/AlgebraicVision/</a> )
2015	T. Pajdla, Z. Kukelova, K. Astrom, L. Kneip, C. Wu. Solving Minimal Problems. ICCV 2015 Tutorial. Santiago de Chile. ( <a href="http://cmp.felk.cvut.cz/minimal-iccv-2015/">cmp.felk.cvut.cz/minimal-iccv-2015/</a> )
2016	T. Pajdla. Computational Algebraic Geometry in 3D Computer Vision. ICMS 2016 Berlin ( <a href="http://icms2016.zib.de">icms2016.zib.de</a> )
2016	T. Pajdla. 3D Reconstruction from Photographs. Key-note talk at XXIII ISPRS Congress, Prague 2016 ( <a href="http://www.isprs2016-prague.com">www.isprs2016-prague.com</a> )

### Funded research projects

1997—2000	Responsible investigator of Construction of Complete 3D Models from Range Images, GACR No. 102/97/0480
1997—2000	Responsible co-investigator of OMNIVIEWS - Omni-directional Visual System, EU Fifth Framework Programme project No. 1999-29017
1999—2000	Responsible investigator of OCAMS — Optimal Model Selection for 3D Data Segmentation, Czech Ministry of Education 4/11/AIP CR
2001—2003	Responsible investigator of OMVI - Omnidirectional Vision, GACR No. 102/01/0971
2002—2005	Responsible co-investigator of BeNoGo - Being There Without Going, EU FP5 project No. IST-2001-39184
2003—2004	Responsible investigator of Computational omnidirectional vision, Czech Ministry of Education Kontakt 22-2003-04
2006—2010	Responsible co-investigator of FP5 EU No. IST-2001-39184. DIRAC - Detection and Identification of Rare Audio-visual Cues
2008—2012	Responsible co-investigator of FP7 EU FP7-SPACE-2007-1. PRoVisG - Planetary Robotics Vision Ground Processing
2010—2013	Responsible co-investigator of FP7 EU FP7-SPACE-241523. PRoViScout - Planetary Robotics Vision Scout
2012—2014	Responsible co-investigator of FP7 EU FP7-SME-2011-285839. De-Montes - Deformation Monitoring by High Resolution Terrestrial Long Range Sensing
2013—2015	Responsible investigator of TACR TA02011275 ATOM - Automatic Three-dimensional Terrain Monitoring
2013—2016	Responsible co-investigator of FP7 EU FP7-SPACE-2012-312377. PRoViDE - Planetary Robotics and Vision Data

### Development

T. Pajdla was a partner and supervisor of the development of products in Neovision s.r.o. He also collaborates with and consults for national and global industries and enterprises:

1996	OPAS – Precise 2D Measurement in Back-light Illumination ( <a href="http://www.neovision.cz/sols/opas.html">www.neovision.cz/sols/opas.html</a> ), Neovision s.r.o.
1997	DIAMES – Quality Control of Rubber Printing Rollers ( <a href="http://www.neovision.cz/sols/diames.html">www.neovision.cz/sols/diames.html</a> ), Neovision s.r.o.

1998	GlassDrop – Measuring the Size of Molten Glass Drops ( <a href="http://www.neovision.cz/sols/gdrop.html">www.neovision.cz/sols/gdrop.html</a> ), Neovision s.r.o.
1999	MESCUt – Quality Control of Jewellery Stones ( <a href="http://www.neovision.cz/sols/mescut.html">www.neovision.cz/sols/mescut.html</a> ), Neovision s.r.o.
2000	ProfEx – Three-dimensional profile extraction and inspection ( <a href="http://www.neovision.cz/sols/profex.html">www.neovision.cz/sols/profex.html</a> ), Neovision s.r.o.
2001	Helios – 3D Polygonal Reconstruction. ( <a href="http://www.neovision.cz/sols/helios.html">http://www.neovision.cz/sols/helios.html</a> ) , Neovision s.r.o.
2002	OPTAN - Optical Object Counting ( <a href="http://www.neovision.cz/sols/optan.html">www.neovision.cz/sols/optan.html</a> ) , Neovision s.r.o.
2003	GillCheck – The Control of Completeness of Assembled Evaporators ( <a href="http://www.neovision.cz/sols/gillcheck.html">http://www.neovision.cz/sols/gillcheck.html</a> ), Neovision s.r.o.
2004	VisInspect – Verification of the Paste Lay on the Given Spots ( <a href="http://www.neovision.cz/sols/visinsp.html">http://www.neovision.cz/sols/visinsp.html</a> ), Neovision s.r.o.
2005	Amoeba – Animation of a Digital Panel Controlled by a Human Presence ( <a href="http://www.neovision.cz/sols/amoeba.html">http://www.neovision.cz/sols/amoeba.html</a> ), Neovision s.r.o.
2006	OBR – Optical Braille Recognition ( <a href="http://www.neovision.cz/prods/obr/">www.neovision.cz/prods/obr/</a> ), Neovision s.r.o.
2007	RangeScan – Online 3D Measurement for Steel Industry ( <a href="http://www.neovision.cz/sols/rngscan.html">www.neovision.cz/sols/rngscan.html</a> ), Neovision s.r.o.
2008	Videoanalytics for Altworx ( <a href="http://www.altworx.com">www.altworx.com</a> ), Neovision s.r.o.
2008	Omnidirectional Vision System for Trucks , consultations for Daimler AG ( <a href="http://www.daimler.com">www.daimler.com</a> )
2009	RoboWeld – Laser Guided Robotic Welding ( <a href="http://www.neovision.cz/cz/sols/roboweld.html">www.neovision.cz/cz/sols/roboweld.html</a> ), Neovision s.r.o.
2010	Wheel-Scan – Train Wheels Measurement ( <a href="http://www.neovision.cz/cz/sols/wheelscan.html">www.neovision.cz/cz/sols/wheelscan.html</a> ), Neovision s.r.o.
2013	Photogrammetric System for Leica Hexagon ( <a href="http://www.leica-geosystems.com">www.leica-geosystems.com</a> )
2014	Camera Calibration Consultations for Intel ( <a href="http://www.intc.com">www.intc.com</a> )
2015	3D Crash Measurement Analysis for Azos s.r.o. ( <a href="http://www.azos.eu">www.azos.eu</a> )
2015	Symbol Recognition for Zentity a.s. ( <a href="http://www.zentity.com">www.zentity.com</a> )
2015	3D Sensor Calibration for MagikEye Inc. ( <a href="http://magik-eye.com">magik-eye.com</a> )
2015	Urban Growth Monitoring in Landsat Stellite Imagery for GISAT & ESA ( <a href="http://www.gisat.cz">www.gisat.cz</a> )
2016	Photogrammetric System for Aurel CZ s.r.o. ( <a href="http://aurelcz.eu">aurelcz.eu</a> )

## Teaching

### Courses

T. Pajdla reads lectures of master courses at the FEE of the CTU in Prague

1. Geometry of Computer Vision and Computer Graphics ([cw.fel.cvut.cz/wiki/courses/a4m33gvg/](http://cw.fel.cvut.cz/wiki/courses/a4m33gvg/))
2. Advanced Robotics ([cw.fel.cvut.cz/wiki/courses/a3m33pro](http://cw.fel.cvut.cz/wiki/courses/a3m33pro))

The courses are constructed to emphasize work during the semester as well as regular testing of the knowledge taught. Targeted labs accompany course lectures. Students submit 10+ assignments in the semester and sit 4 quizzes. The final exam is written (2 hours) as well as oral (2.5 hours for not more than 5 students).

Since 2015, T. Pajdla reads similar courses at the Faculty of Mathematics and Physics of the Charles University in Prague.

T. Pajdla helped to build the PhD course "Mathematics for Cybernetics" taught by Prof. Pavel Ptak (<https://math.feld.cvut.cz/ptak/>) and co-authored the textbook: P. Ptak, T. Pajdla. Mathematical Structures used in Cybernetics. CTU in Prague, 2009.

T. Pajdla has supervised and co-supervised more than ten Ph.D. students and more than 30 MSc. and BSc. Students.

### Notable MSc. students

1995	Tomas Svoboda. Camera Self-calibration and Motion Analysis.	Ph.D. from the CTU in Prague.
2001	Ondrej Chum. The Reconstruction of 3D Scene from the Correspondences in Images.	Ph.D. from the CTU in Prague. Postdoc at the University of Oxford, Currently an Associate Professor at the CTU in Prague.
2001	Rostislav Horcik. Correspondences in Images.	PhD from the CTU in Prague. Currently with the Academy of Sciences of the Czech Republic.
2002	Josef Sivic. Geometry of Concentric Multi-perspective Panoramas.	PhD from the University of Oxford. Postdoc at MIT. Currently at Ecole Normale Supérieure Paris. EU ERC 2013 Starting Grant Recipient.
2008	Jan Heller. Stereo Reconstruction from Wide-Angle Images.	Ph.D. from the CTU in Prague.
2008	Ondrej Sychrovsky. Car-to-obstacle Distance Estimation from a Sequence of Images.	Researcher at the CTU in Prague.
2009	Jan Knopp. Image Based Localization	PhD from the Katholieke Universiteit Leuven.
2011	Jan Smisek. 3D Camera Calibration	PhD student at the TU Delft.
2011	Cenek Abl. PanCam Bundle Adjustment.	Ph.D. student at the CTU in Prague.
2016	Filip Srajer. Image Matching for Dynamic Scenes	Ph.D. student at ETH Zurich.

### Notable Ph.D. students

2000	Tomas Svoboda. Central Panoramic Cameras Design, Geometry, Egomotion.	Postdoc at ETH Zurich. Currently an Associate professor at the CTU in Prague.
2003	Daniel Martinec. Factorization Methods in Multiple View Geometry.	Researcher in Microsoft Inc.
2004	Branislav Micusik. Two-view geometry of omnidirectional cameras.	Postdoc at Stanford University. Currently a researcher at the Austrian Institute of Technology Vienna. Recipient of Austrian Association for Pattern Recognition "The best young scientist in the field of visual computing in Austria in 2011" award.
2006	Hynek Bakstein. Non-central Cameras for 3D Reconstruction	Currently Patent Examiner at the European Patent Office, Munich
2008	Tobias Ehlgen. Omnidirectional Cameras for Safe Automobile Driving.	Daimler AG, Bosch. Daimler AG covered his tuitions fees at the CTU.
2012	Michal Havlena. Incremental Structure	Postdoc at ETH Zurich. Recipient of the CSKI best

	from Motion for Large Ordered and Unordered Sets of Images	2012 PhD dissertation in cybernetics and informatics in the Czech Republic.
2013	Martin Bujnak. Algebraic solutions to absolute pose problems	Partner in Capturing Reality s.r.o. SK. Finalist of the CSKI Antonin Svoboda Prize for the best Ph.D. work in 2013.
2013	Zuzana Kukelova. Algebraic Methods in Computer Vision	Postdoc at Microsoft Research Cambridge. CTU FEE Dean's Selected PhD Theses of the Year 2013 Award. CSKI Antonin Svoboda Prize for the best Ph.D. work in 2013. 2015 EU Cor Baayen Award.
2015	Michal Jancosek. Large Scale Surface Reconstruction based on Point Visibility	Partner in Capturing Reality s.r.o. SK.
2016	Jan Heller. Global Optimization Techniques in Camera-Robot Calibration	Researcher in Magik-Eye Inc.

### PhD Committees

2001	David. Liebowitz. Camera Calibration and Reconstruction of Geometry from Images. University of Oxford. Supervisor prof. Andrew Zisserman.	Referee and VIVA member
2006	Chanop Silpa-Anan. Towards Visual Map Building, Localisation, and Navigation. Australian National University Canberra. Supervisor prof. Richard Hartley	Referee
2006	Srikumar Ramalingam. Generic Imaging Models: Calibration and 3D Reconstruction Algorithms. Institut National Polytechnique de Grenoble. Supervisor Dr. Peter Sturm.	Referee and VIVA member
2006	Thomas Bonfort. Specular Surface Reconstruction from Images. Institut National Polytechnique de Grenoble. Supervisor Dr. Peter Sturm.	Referee and VIVA member
2009	Aubrey Keith Dunne. Calibration of Non-Conventional Imaging Systems. Dublin City University. Supervisor prof. Paul F. Whelan.	Referee and VIVA member
2010	Zafer Arikan. Analysis of Multiview Omnidirectional Images in a Spherical Framework. EPFL Lausanne. Supervisor Prof. Pascal Frossard.	Referee and VIVA member
2012	Leonardo De Maeztu Reinares. Towards accurate and real-time local stereo correspondence algorithms: computational efficiency and massively parallel architectures. Universidad Pública de Navarra. Supervisor Dr. Stefano Mattoccia.	Referee
2012	Salam Moubarak. Modeling and Control of an Upper Extremity Exoskeleton. Institut National des Sciences Appliqués de Lyon. Supervisor prof. Tanguy Redarce.	Referee and VIVA member
2014	Erik Ringaby. Geometric Models for Rolling-shutter and Push-broom Sensors. University fo Linkoping. Supervisor Dr. Per-Erik Forsen	Oponent
2015	Zhe Liu. Robust, refined and selective matching for accurate camera pose estimation. École des Ponts ParisTech. Supervisors Prof. Renaud Marlet a Pascal Monasse.	Referee and VIVA member
2015	Linus Swarm. Efficient Optimization Techniques for Localization and Registration of Images. Lund University. Supervisor Prof.	Oponent

	Magnus Oskarsson.	
2015	Hafeez Anwar. Invariant Image Representations for Object Category-Based Image Classification. Technical University Vienna. Supervisor Assoc. Prof. Martin Kampel.	Referee and VIVA member

## Service

### Boards and Committees

2006-2008	Member of the Board of the Technology Incubator of the CTU ( <a href="http://www.inovacentrum.cvut.cz">www.inovacentrum.cvut.cz</a> ).
2007-2008	Member of EU FP7 IST FET grant selection committees.
2014-2016	Member of the Expert panel for Evaluation of Results of Research and Development - Panel Nr. 7 - Mathematical Sciences. The Research, Development and Innovation Council of the Czech Republic.
2015-2016	Member of CTU CIIRC Career Attestation Committee.

### Editorial boards & conference chair, organizer

2000	OMNIVIS 2000 - Workshop on Omnidirectional Vision, Camera Networks, and Non-Classical Cameras ( <a href="http://www.cis.upenn.edu/~kostas/omnivis.html">http://www.cis.upenn.edu/~kostas/omnivis.html</a> )	Program Committee member
2003	OMNIVIS 2003 - Workshop on Omnidirectional Vision, Camera Networks, and Non-Classical Cameras ( <a href="http://www.cs.wustl.edu/~pless/omnivis2003.html">http://www.cs.wustl.edu/~pless/omnivis2003.html</a> )	Program Committee member
2004	European Conference on Computer Vision ( <a href="http://cmp.felk.cvut.cz/eccv2004">cmp.felk.cvut.cz/eccv2004</a> )	Program chair and organization chair
2004-now	Board of European Conference on Computer Vision	Member
2004	OMNIVIS 2004 - Workshop on Omnidirectional Vision, Camera Networks, and Non-Classical Cameras ( <a href="http://cmp.felk.cvut.cz/~svoboda/Omnivis2004/">http://cmp.felk.cvut.cz/~svoboda/Omnivis2004/</a> )	Program Committee member
2005	OMNIVIS 2005 - Workshop on Omnidirectional Vision, Camera Networks, and Non-Classical Cameras ( <a href="http://www.fieldrobotics.org/~cgeyer/OMNIVIS05/">http://www.fieldrobotics.org/~cgeyer/OMNIVIS05/</a> )	Program Committee member
2005	IEEE International Conference on Computer Vision	Area chair
2006	Asian Conference on Computer Vision	Area chair
2006	ECCV 2004 special issue of the International Journal on Computer Vision, 67(2), April 2006 ( <a href="http://link.springer.com/journal/11263/67/2/page/1">http://link.springer.com/journal/11263/67/2/page/1</a> )	Co-editor
2006-now	Foundations and Trends in Computer Graphics and Vision ( <a href="http://www.nowpublishers.com/journals/CGV/">http://www.nowpublishers.com/journals/CGV/</a> )	Member of the Editorial board
2006	IEEE Conference on Computer Vision and Pattern Recognition	Area chair
2007	Asian Conference on Computer Vision	Area chair
2007	IEEE Conference on Computer Vision and Pattern Recognition	Area chair
2007	OMNIVIS 2007 - Workshop on Omnidirectional Vision, Camera Networks, and Non-Classical Cameras	Program chair



	( <a href="http://www.aisb.org.uk/index.php/news/82-bulletin/120-bulletin-item?event_id=324&amp;bulletin_type=event">http://www.aisb.org.uk/index.php/news/82-bulletin/120-bulletin-item?event_id=324&amp;bulletin_type=event</a> )	
2007	IEEE International Conference on Computer Vision	Area chair
2008	OMNIVIS 2008 ( <a href="http://hal.inria.fr/OMNIVIS2008/en">http://hal.inria.fr/OMNIVIS2008/en</a> )	Program Committee member
2008	European Conference on Computer Vision	Area chair
2009	OMNIVIS 2009 ( <a href="http://www.am.sanken.osaka-u.ac.jp/omnivis2009/">http://www.am.sanken.osaka-u.ac.jp/omnivis2009/</a> )	Program Committee member
2009	IEEE International Conference on Computer Vision	Area chair
2009	Asian Conference on Computer Vision	Area chair
2010	Special issue on Omnidirectional Robot Vision of the Journal of Robotics and Autonomous Systems, 58(6), June, 2010 ( <a href="http://www.sciencedirect.com/science/journal/09218890/58/6">http://www.sciencedirect.com/science/journal/09218890/58/6</a> ).	Co-editor
2010-13	IPSI Transactions on Computer Vision and Applications ( <a href="http://www.am.sanken.osaka-u.ac.jp/CVA/">http://www.am.sanken.osaka-u.ac.jp/CVA/</a> )	Associate editor in chief
2010	OMNIVIS 2010 ( <a href="http://people.csail.mit.edu/koch/omnivis2010/">http://people.csail.mit.edu/koch/omnivis2010/</a> )	Program Committee member
2010	CVVT:E2M 2010 – Computer Vision in Vehicle Technology – from Earth to Mars ( <a href="http://www.media.imit.chiba-u.jp/CVVT2010/">http://www.media.imit.chiba-u.jp/CVVT2010/</a> )	Program chair
2010	Asian Conference on Computer Vision	Area chair
2011-now	IEEE Transactions on Pattern Analysis and Machine Intelligence ( <a href="http://www.computer.org/portal/web/tpami">http://www.computer.org/portal/web/tpami</a> )	Associate editor
2011	OMNIVIS 2011 ( <a href="http://www.eecis.udel.edu/~yu/OMNIVIS/">http://www.eecis.udel.edu/~yu/OMNIVIS/</a> )	Program Committee member
2011	CVVT:E2M 2011 ( <a href="http://www.cvc.uab.es/adas/CVVT2011">http://www.cvc.uab.es/adas/CVVT2011</a> )	Program chair
2011	IEEE International Conference on Computer Vision	Area chair
2012	CVVT:E2M 2012 ( <a href="http://www.cvc.uab.es/adas/CVVT2012">http://www.cvc.uab.es/adas/CVVT2012</a> )	Program chair
2012	European Conference on Computer Vision	Area chair
2013	CVVT:E2M 2013 ( <a href="http://www.cvc.uab.es/adas/CVVT2013">http://www.cvc.uab.es/adas/CVVT2013</a> )	Program chair
2013	IEEE International Conference on Computer Vision	Area chair
2013-now	IPSI Transactions on Computer Vision and Applications ( <a href="http://ipsjcva.springeropen.com">ipsjcva.springeropen.com</a> )	Associate editor
2014-now	Computer Vision and Image Understanding ( <a href="http://www.journals.elsevier.com/computer-vision-and-image-understanding">http://www.journals.elsevier.com/computer-vision-and-image-understanding</a> )	Area Editor
2014	CVPR 2014 – IEEE Conference on Computer Vision and Pattern Recognition ( <a href="http://www.pamitc.org/cvpr14/">www.pamitc.org/cvpr14/</a> )	Program Committee member
2014	OMNIVIS 2014 ( <a href="https://fling.seas.upenn.edu/~luispuig/wiki/OMNIVIS">https://fling.seas.upenn.edu/~luispuig/wiki/OMNIVIS</a> )	Program Committee member
2014	14th European Conference on Computer Vision. Zurich 2014 ( <a href="http://eccv2014.org">eccv2014.org</a> )	Program chair
2015	CVPR 2015 – IEEE Conference on Computer Vision and Pattern Recognition ( <a href="http://www.pamitc.org/cvpr15/">www.pamitc.org/cvpr15/</a> )	Program Committee member
2015	CVVT:E2M 2015 ( <a href="http://adas.cvc.uab.es/CVVT2015">adas.cvc.uab.es/CVVT2015</a> )	Program chair
2015	Vision for Autonomous Vehicles and Probes (Dagstuhl Seminar	Organizer

	15461, <a href="http://www.dagstuhl.de/en/program/calendar/semhp/?semnr=15461">www.dagstuhl.de/en/program/calendar/semhp/?semnr=15461</a> )	
2016	CVIU Special Issue on Light Field for Computer Vision ( <a href="http://www.sciencedirect.com/science/journal/10773142">www.sciencedirect.com/science/journal/10773142</a> )	Co-editor
2016	CVPR 2016 – IEEE Conference on Computer Vision and Pattern Recognition ( <a href="http://cvpr2016.thecvf.com">cvpr2016.thecvf.com</a> )	Program Committee member
2016	CVVT:E2M 2016 ( <a href="http://adas.cvc.uab.es/cvvt2016">adas.cvc.uab.es/cvvt2016</a> )	Program chair
2016	XXIII Congress of the International Society for Photogrammetry and Remote Sensing ( <a href="http://www.isprs2016-prague.com">www.isprs2016-prague.com</a> )	Local Program Committee member
2016	15th European Conference on Computer Vision. Amsterdam 2016 ( <a href="http://eccv2016.org">eccv2016.org</a> )	Area chair
2016	3DV - International Conference on 3D Vision 2016, Stanford ( <a href="http://3dv.stanford.edu">3dv.stanford.edu</a> )	Area chair
2016	ACCV 2016 – Asian Conference on Computer Vision, Taipei ( <a href="http://www.accv2016.org">www.accv2016.org</a> )	Program Committee member

## Collaboration

T. Pajdla has been collaborating with a number of universities, institutes, and research bodies including:

- Katholieke Universiteit Leuven (Prof. Luc Van Gool)
- INRIA Grenoble (Dr. Peter Sturm)
- LAAS-CNRS, University of Toulouse (Prof. Didier Henrion)
- Lund University (Prof. Kalle Astrom)
- ETH Zurich (Prof. Luc Van Gool, Prof. Marc Pollefeys)
- IDIAP Research Institute Martigny (Prof. Hynek Hermansky)
- Ecole Normale Supérieure Paris, (Prof. Jean Ponce, Dr. Josef Sivic)
- Joanneum Research Graz (Mr. Gerhard Paar)
- University of Oxford (Prof. Andrew Zisserman)
- Aberystwyth University (Prof. David Barnes)
- Jet Propulsion Laboratory of Caltech (Mr. Robert Deen. Mr. Veljiko Jovanovic)
- Hebrew University of Jerusalem (Prof. Shmuel Peleg, Prof. Daphna Weinshall)
- Technion Haifa (Prof. Alfred Bruckstein)
- National Institute of Informatics Tokyo (Prof. Akihiro Sugimoto)
- Tokyo Institute of Technology (Assistant Prof. Akihiko Torii)
- Australian National University (Prof. Richard Hartley)
- University of Pennsylvania (Prof. Jiambo Shi)
- Microsoft Research (Dr. Andrew Fitzgibbon)
- EADS Astrium (Dr. Waugh Lester)
- German Aerospace Center (DLR) (Dr. Konrad Willner)
- TUB – Technische Universität Berlin (Prof. Juergen Oberst)
- University College London (Prof. Jan-Peter Muller)
- The Ohio State University (Prof. Rongsing Li)
- University of Surrey (Dr. Gao Yang)
- CNES – Centre National d'Études Spatiales (Mr. Michel Maurette)
- Technical University Munich (Prof. Thomas Wunderlich)
- University of Nottingham (Dr. Jeremy Morley)
- MIIGAIK – Moscow State University of Geodesy and Cartography (Dr. Irina Karachevtseva)
- Google (Dr. Sameer Agarwal)

- University of Washington (Prof. Rekha Thomas)
- UC Berkeley (Prof. Bernd Sturmfels)

## Publications

### Impacted journals

- [1] Tomas. Pajdla. Stereo with oblique cameras. **International Journal of Computer Vision**, 47(1-3): 161-170. 2002. (IF 3.623)
- [2] Tomas. Svoboda, Tomas. Pajdla. Epipolar geometry for central catadioptric cameras. **International Journal of Computer Vision**, 49(1): 23-37. 2002. (IF 3.623)
- [3] Pavel. Krsek, Tomas. Pajdla, Vaclav. Hlavac. Differential invariants as the base of triangulated surface registration. **Computer Vision and Image Understanding**, 87(1): 27- 38. 2002. (IF 1.540)
- [4] Tomas. Werner, Tomas. Pajdla, Vaclav. Hlavac, A. Leonardis, M. Matousek. Selection of reference images for image-based scene representations. **Computing**, 68(2): 163-180. 2002. (IF 0.593)
- [5] Jiri. Matas, Ondrej. Chum, Martin. Urban, Tomas. Pajdla. Robust wide-baseline stereo from maximally stable extremal regions. **Image and Vision Computing**, 22(10): 761-767. 2004. (IF 1.578)
- [6] Ondrej. Chum, Tomas. Pajdla, Peter. Sturm. The geometric error for homographies. **Computer Vision and Image Understanding**, 97(1): 86-102. 2005. (IF 1.540)
- [7] Branislav Micusik and Tomas Pajdla. Structure from motion with wide circular field of view cameras. **IEEE Transactions on Pattern Analysis and Machine Intelligence**, 28(7): 1135–1149, July 2006. (IF 5.694)
- [8] Tobias Ehlgen, Tomas Pajdla, and Dieter Ammon. Eliminating blind spots for assisted driving. **IEEE Transactions on Intelligent Transportation Systems**, 9(4): 657–665, December 2008. (IF 2.377)
- [9] Zuzana Kukelova, Martin Byrod, Klas Josephson, Tomas Pajdla, and Kalle Astrom. Fast and robust numerical solutions to minimal problems for cameras with radial distortion. **Computer Vision and Image Understanding**, 114(2):234–244, February 2010. (IF 1.540)
- [10] Akihiko Torii, Michal Havlena, and Tomas Pajdla. Omnidirectional image stabilization for visual object recognition. **International Journal of Computer Vision**, 91(2): 157–174, January 2011. (IF 3.623)
- [11] Zuzana Kukelova and Tomas Pajdla. A minimal solution to radial distortion autocalibration. **IEEE Transactions on Pattern Analysis and Machine Intelligence**, 33(12): 2410–2422, December 2011. (IF 5.694)
- [12] Zuzana Kukelova, Martin Bujnak, and Tomas Pajdla. Polynomial eigenvalue solutions to minimal problems in computer vision. **IEEE Transactions on Pattern Analysis and Machine Intelligence**, 34(7):1381–1393, July 2012. (IF 5.694)
- [13] Daphna Weinshall, Alon Zweig, Hynek Hermansky, Stefan Kombrink, Frank W. Ohl, Jorn Anemuller, Jorg-Hendrik Bach, Luc Van Gool, Fabian Nater, Tomas Pajdla, Michal Havlena, and Misha Pavel. Beyond novelty detection: Incongruent events, when general and specific classifiers disagree. **IEEE Transactions on Pattern Analysis and Machine Intelligence**, 34(10):1886–1901, October 2012. (IF 5.694)

- [14] Akihiko Torii, Josef Sivic, Masatoshi Okutomi, and Tomas Pajdla. Visual place recognition with repetitive structures visual place recognition with repetitive structures. **IEEE Transactions on Pattern Analysis and Machine Intelligence**, 37(11):2346–2359, 2015. (IF 5.694)
- [15] Jan Heller, Michal Havlena, and Tomas Pajdla. Globally optimal hand-eye calibration using branch-and-bound. **IEEE Transactions on Pattern Analysis and Machine Intelligence**, 2015. (IF 5.694)
- [16] Jan Heller, Tomas Pajdla. GpoSolver: a Matlab/C++ toolbox for global polynomial optimization. **Optimization Methods and Software**, 31(2):405-434, 2016. (IF 1.624)
- [17] Petr Gronát, Josef Sivic, Guillaume Obozinski, Tomas Pajdla. Learning and Calibrating Per-Location Classifiers for Visual Place Recognition. **International Journal of Computer Vision**, 1–18, April 2016. (IF 3.623)

### Reviewed journals

- [18] Martin Bujnak, Zuzana Kukelova, and Tomas Pajdla. Efficient solutions to the absolute pose of cameras with unknown focal length and radial distortion by de-composition to planar and non-planar cases. **IPSA Transactions on Computer Vision and Applications**, 4:78–86, May 2012.
- [19] Akihiko Torii, Yafei Dong, Masatoshi Okutomi, Josef Sivic, and Tomas Pajdla. Efficient localization of panoramic images using tiled image descriptors. **IPSA Transactions on Computer Vision and Applications**, 6:58–62, July 2014.
- [20] Michal Jancosek and Tomas Pajdla. Exploiting visibility information in surface reconstruction to preserve weakly supported surfaces. **International Scholarly Research Notices**, 2014, Article ID 798595, 2014.

### Reviewed conferences

- [21] Tomas Pajdla and Vaclav Hlavac. Surface discontinuities in range images. In **ICCV 1993: 4th IEEE International Conference on Computer Vision**, Berlin, pages 524–528, Berlin, Germany, May 1993. IEEE Computer Society Press.
- [22] Tomas Pajdla and Vaclav Hlavac. Surface discontinuities in range images. In **5th International Conference, CAIP'93, Budapest**, Lecture Notes in Computer Science (LNCS) 719, pages 412–419, Budapest, Hungary, September 1993. Springer Verlag.
- [23] Tatjana Dostalova, Vaclav Hlavac, Tomas Pajdla, Radim Sara, and Vladimir Smutny. Three computer vision applications in dentistry. In **Physiology and Function from Multidimensional Images**, number 2168 in SPIE Proceedings Series, pages 416–424, Bellingham, Washington, February 1994. SPIE - The International Society for Optical Engineering, SPIE - The International Society for Optical Engineering.
- [24] Vaclav Hlavac, Tomas Pajdla, and Milos Sommer. Improvement of the curvature computation. In **Proceedings of the 12th International Conference on Pattern Recognition, Jerusalem, Israel**, volume 1, Computer Vision and Image Processing, pages 536–538, Jerusalem, Israel, October 1994. IEEE Computer Society Press.
- [25] Tomas Pajdla and Luc Van Gool. Matching of 3D curves using semi-differential invariants. In **ICCV 1995: 5th IEEE International Conference on Computer Vision**, pages 390–395, Cambridge, USA, June 1995. IEEE Computer Society Press.

- [26] Tomas Pajdla and Luc Van Gool. Efficient matching of space curves. In **6th International Conference on Computer Analysis of Images and Patterns, CAIP'95**, Lecture note in Computer Science, pages 25–32, Prague, Czech Republic, September 1995. Czech Pattern Recognition Society, IAPR, Springer Verlag.
- [27] Tomas Pajdla and Vaclav Hlavac. Camera calibration and Euclidean reconstruction from known observer translations. In **CVPR 1998: IEEE International Conference on Computer Vision and Pattern Recognition**, pages 421–426, Santa Barbara, California, USA, June 1998. IEEE.
- [28] Vladimir Smutny, Vaclav Hlavac, and Tomas Pajdla. Vision-based sensors for production control — the experience gathered in applications. In **Intelligent Systems for Manufacturing**, pages 525–32, Boston, USA, August 1998. IFIP, Kluwer Academic Publisher.
- [29] Tomas Svoboda, Tomas Pajdla, and Vaclav Hlavac. Motion estimation using central panoramic cameras. In **IEEE International Conference on Intelligent Vehicles**, pages 335–340, Stuttgart, Germany, October 1998. Causal Productions.
- [30] Tomas Pajdla and Vaclav Hlavac. Zero phase representation of panoramic images for image based localization. In **8-th International Conference on Computer Analysis of Images and Patterns**, number 1689 in Lecture Notes in Computer Science, pages 550–557, Ljubljana, 1999. Springer Verlag.
- [31] Tomas Pajdla. Robot localization using panoramic images. In **CVWW 1999: Computer Vision Winter Workshop 1999**, pages 1–12. Vienna University of Technology, Pattern Recognition and Image Processing Group of the Vienna University of Technology. 1999.
- [32] Tomas Pajdla, Vladimir Smutny, Vaclav Hlavac, and Petr Palatka. Contour segmentation for precise measurement in backlight illumination. In **Robust Vision for Industrial Applications, 23rd OAGM-Workshop**, pages 147–154, Austrian Association for Pattern Recognition. Steyr, 1999.
- [33] Hynek Bakstein and Tomas Pajdla. 3D reconstruction from 360 x 360 mosaics. In **CVPR 2001: IEEE Conference on Computer Vision and Pattern Recognition**, volume 2, pages 72–77, Los Alamitos, USA, December 2001. IEEE Computer Society.
- [34] Stefan Gachter, Tomas Pajdla, and Branislav Micusik. Mirror design for an omnidirectional camera with a space variant imager. In **ICAR 2001 Proceedings and Overviews of the Workshops 1. Omnidirectional Vision 2. Medical Robotics**, pages 99–105, Budapest, Hungary,. IEEE, University of Technology and Economics, 2001.
- [35] Tomas Pajdla and Vaclav Hlavac. Image-based self-localization by means of zero phase representation in panoramic images. In **Advances of Pattern Recognition, Proceedings of the 2nd International Conference on Advanced Pattern Recognition**, volume 2013 of *Lecture Notes in Computer Science*, pages 24–33, Heidelberg, Germany, March 2001. IAPR, Springer-Verlag.
- [36] Tomas Svoboda and Tomas Pajdla. Matching in catadioptric images with appropriate windows and outliers removal. In **CAIP 2001: 9th International Conference on Computer Analysis of Images and Patterns**, pages 733–740, Berlin, Germany, September 2001. Springer Verlag.
- [37] Tomas Werner and Tomas Pajdla. Chirality in epipolar geometry. In **ICCV 2001: IEEE International Conference on Computer Vision**, pages 548–553. IEEE Computer Society Press, July 2001.

- [38] Tomas Werner and Tomas Pajdla. Oriented matching constraints. In **BMVC 2001: British Machine Vision Conference 2001**, pages 441–450, London, UK, September 2001. British Machine Vision Association.
- [39] Tomas Werner and Tomas Pajdla. On existence of strong realization of two central panoramic images. In **Proceedings of CVWW 2001: Computer Vision Winter Workshop**, pages 202–213, Ljubljana, Slovenia, February 2001. Slovenian Pattern Recognition Society.
- [40] Jiri Matas, Martin Urban, and Tomas Pajdla. Unifying view for wide-baseline stereo. In **CVWW 2001: Proceedings of Computer Vision Winter Workshop**, pages 214–222, Ljubljana, Slovenia, February 2001. Slovenian Pattern Recognition Society.
- [41] Ondrej Chum and Tomas Pajdla. Evaluating error of homography. In **Proceedings of the Computer Vision Winter Workshop 2002**, pages 315–324, Wien, Austria, February 2002. Pattern Recognition & Image Processing Group, Vienna University of Technology.
- [42] Daniel Martinec and Tomas Pajdla. Structure from many perspective images with occlusions. In **Proceedings of the ECCV 2002: European Conference on Computer Vision 2002**, volume II, pages 355–369, Berlin, Germany, May 2002. Springer-Verlag.
- [43] Jiri Matas, Ondrej Chum, Martin Urban, and Tomas Pajdla. Robust wide baseline stereo from maximally stable extremal regions. In **BMVC 2002: Proceedings of the British Machine Vision Conference**, volume 1, pages 384–393, London, UK, September 2002. BMVA.
- [44] Giulio Sandini, Jose Santos-Victor, Tomas Pajdla, and Fabio Berton. OMNIVIEWS: Direct omnidirectional imaging based on a retina-line sensor. In Proc. of the **1st IEEE International Conference on Sensors**. IEEE, 2002.
- [45] Hynek Bakstein, Tomas Pajdla, and Daniel Vecerka. Rendering almost perspective views from a sparse set of omnidirectional images. In **BMVC 2003: Proceedings of the 14th British Machine Vision Conference**, volume 1, pages 241–250, London, UK, September 2003. British Machine Vision Association.
- [46] Hynek Bakstein and Tomas Pajdla. Rendering novel views from a set of omnidirectional mosaic images. In Proceedings of **OMNIVIS 2003: Workshop on Omnidirectional Vision and Camera Networks**, page 6, Los Alamitos, USA, June 2003. IEEE Computer Society Press.
- [47] Ondrej Chum, Tomas Werner, and Tomas Pajdla. Joint orientation of epipoles. In **BMVC 2003: Proceedings of the 14th British Machine Vision Conference**, volume 1, pages 73–82, London, UK, September 2003. BMVA, BMVA.
- [48] Doron Feldman, Tomas Pajdla, and Daphna Weinshall. On the epipolar geometry of the crossed-slits projection. In **ICCV 2003: Proceedings of the 9th IEEE International Conference on Computer Vision**, IEEE Computer Society, 2003.
- [49] Daniel Martinec and Tomas Pajdla. Consistent multi-view reconstruction from epipolar geometries with outliers. In **SCIA 2003: Proceedings of the 13th Scandinavian Conference on Image Analysis**, volume 1, pages 493–500, Berlin, Germany, June 2003. Springer-Verlag.
- [50] Branislav Micusik and Tomas Pajdla. Estimation of omnidirectional camera model from epipolar geometry. In **CVPR 2003: IEEE Computer Society Conference on Computer Vision and Pattern Recognition**, volume 1, pages 485–490, Los Alamitos, USA, June 2003. IEEE Computer Society.

- [51] Hugo Cornelius, Radim Sara, Daniel Martinec, Tomas Pajdla, Ondrej Chum, and Jiri Matas. Towards complete free-form reconstruction of complex 3D scenes from an unordered set of uncalibrated images. In **ECCV 2004 Workshop Statistical Methods in Video Processing**, volume LNCS 3247, pages 1–12, Heidelberg, Germany, May 2004. Springer-Verlag.
- [52] Marc Menem and Tomas Pajdla. Constraints on perspective images and circular panoramas. In **BMVC 2004: Proceedings of the 15th British Machine Vision Conference**, London, UK, September 2004. BMVA, British Machine Vision Association.
- [53] Branislav Micusik, Daniel Martinec, and Tomas Pajdla. 3D metric reconstruction from uncalibrated omnidirectional images. In Proc. of the **ACCV: Asian Conference on Computer Vision**, volume 1, pages 545–550, Seoul, Korea South, January 2004. Asian Federation of Computer Vision Societies.
- [54] Branislav Micusik and Tomas Pajdla. Para-catadioptric camera auto-calibration from epipolar geometry. In Proc. of the **ACCV: Asian Conference on Computer Vision**, volume 2, pages 748–753, Seoul, Korea South, January 2004. Asian Federation of Computer Vision Societies.
- [55] Branislav Micusik and Tomas Pajdla. Autocalibration & 3D reconstruction with non-central catadioptric cameras. In **CVPR 2004: IEEE Computer Society Conference on Computer Vision and Pattern Recognition**, volume 1, pages 58–65, Los Alamitos, USA, June – July 2004. IEEE Computer Society.
- [56] Hynek Bakstein, Tomas Pajdla, and Federico Diaz. A window into reality. In **EVA 2005 Berlin: Proceedings of Electronic Imaging and the Visual Arts Conference**, EVA conference International, pages 142–147, Berlin, Germany, November 2005. Gesellschaft zur Forderung Angewandter Informatik.
- [57] Daniel Martinec and Tomas Pajdla. 3D reconstruction by fitting low-rank matrices with missing data. In **CVPR 2005: IEEE Conference on Computer Vision and Pattern Recognition conference**, volume 1, pages 198–205, Los Alamitos, California, June 2005. IEEE Computer Society, IEEE Computer Society.
- [58] George Kamberov, Gerda Kamberova, Ondrej Chum, Stepan Obdrzalek, Daniel Martinec, Jana Kostkova, Tomas Pajdla, Jiri Matas, and Radim Sara. 3D geometry from uncalibrated images. In **ISVC'06: Proceedings 2nd International Symposium on Visual Computing**, number 4292 in Lecture Notes in Computer Science, pages 802–813, Berlin, Germany, November 2006. Springer-Verlag.
- [59] Daniel Martinec and Tomas Pajdla. 3d reconstruction by gluing pair-wise Euclidean reconstructions, or “how to achieve a good reconstruction from bad images”. In **Third International Symposium on 3D Data Processing, Visualization and Trans-mission (3DPVT)**, page 8, Piscataway, USA, June 2006. IEEE Computer Society, IEEE Computer Society.
- [60] Tobias Ehlgen and Tomas Pajdla. Monitoring surrounding areas of truck-trailer combinations. In **ICVS 2006: Proceedings of the 5th International Conference on Vision Systems**, page 10, Bielefeld, Germany, March 2007. Applied Computer Science Group, Bielefeld University.
- [61] Tobias Ehlgen and Tomas Pajdla. Maneuvering aid for large vehicle using omnidirectional cameras. In **WACV: 8th IEEE Workshop on Applications of Computer Vision**, page 6, Los Alamitos, USA, October 2007. IEEE Computer Society Press.
- [62] Vladimir Smutny, Petr Prasek, Petr Palatka, and Tomas Pajdla. 3-D reconstruction of Langweil’s model of Prague: Data acquisition. In **EVA 2007 Berlin: Elektronische Bildverarbeitung und Kunst**,



- Kultur, Historie**, pages 101–107, Rudower Chaussee 30, 12489, Berlin, Germany, November 2007. EVA Conferences International, Gesellschaft zur Forderung Angewandter Informatik.
- [63] Zuzana Kukelova and Tomas Pajdla. A minimal solution to the autocalibration of radial distortion. In **Proceedings of the Computer Vision and Pattern Recognition conference (CVPR)**, page 7, Los Alamitos, USA, June 2007. IEEE Computer Society, IEEE Computer Society Press.
- [64] Daniel Martinec and Tomas Pajdla. Robust rotation and translation estimation. In **Proceedings of the Computer Vision and Pattern Recognition conference (CVPR)**, page 8, Los Alamitos, USA, June 2007. IEEE Computer Society, IEEE Computer Society.
- [65] Branislav Micusik and Tomas Pajdla. Multi-label image segmentation via max-sum solver. In **Proceedings of the Computer Vision and Pattern Recognition conference (CVPR)**, page 6, Los Alamitos, USA, June 2007. IEEE Computer Society, IEEE Computer Society.
- [66] Jorn Anemuller, Jorg-Hendrik Bach, Barbara Caputo, Michal Havlena, Luo Jie, Hendrik Kayser, Bastian Leibe, Petr Motlicek, Tomas Pajdla, Misha Pavel, Akihiko Torii, Luc Van Gool, Alon Zweig, and Hynek Hermansky. The DIRAC AWEAR audio-visual platform for detection of unexpected and incongruent events. In **ICMI 2008: Proceedings of the 10th International Conference on Multimodal Interfaces**, pages 289–292, New York, USA, October 2008. Association for Computing Machinery, ACM.
- [67] Michal Havlena, Tomas Pajdla, and Kurt Cornelis. Structure from omnidirectional stereo rig motion for city modeling. In **VISAPP 2008: Proceedings of the Third International Conference on Computer Vision Theory and Applications**, volume 2, pages 407–414, Setubal, Portugal, January 2008. INSTICC Press.
- [68] Michal Havlena, Akihiko Torii, and Tomas Pajdla. Camera trajectory from wide baseline images. In **EPSC 2008: European Planetary Science Congress Abstracts**, volume 3, page 2, Goettingen, Germany, September 2008. Europlanet Research Infrastructure, Copernicus Gesellschaft mbH.
- [69] Martin Bujnak, Zuzana Kukelova, and Tomas Pajdla. A general solution to the p4p problem for camera with unknown focal length. In **CVPR 2008: Proceedings of the 2008 IEEE Computer Society Conference on Computer Vision and Pattern Recognition**, page 8, Madison, USA, June 2008. IEEE Computer Society, Omnipress.
- [70] Martin Byrod, Zuzana Kukelova, Klas Josephson, Tomas Pajdla, and Kalle Astrom. Fast and robust numerical solutions to minimal problems for cameras with radial distortion. In **CVPR 2008: Proceedings of the 2008 IEEE Computer Society Conference on Computer Vision and Pattern Recognition**, page 8, Madison, USA, June 2008. IEEE Computer Society, Omnipress.
- [71] Zuzana Kukelova, Martin Bujnak, and Tomas Pajdla. Polynomial eigenvalue solutions to the 5-pt and 6-pt relative pose problems. In **BMVC 2008: Proceedings of the 19th British Machine Vision Conference**, volume 1, pages 565–574, Malvern, UK, September 2008. BMVA.
- [72] Zuzana Kukelova, Martin Bujnak, and Tomas Pajdla. Automatic generator of mini-mal problem solvers. In **Computer Vision - ECCV 2008, 10th European Conference on Computer Vision, Proceedings, Part III**, volume 5304 of **Lecture Notes in Computer Science**, pages 302–315, Berlin, Germany, October 2008. Springer.
- [73] Akihiko Torii, Michal Havlena, Tomas Pajdla, and Bastian Leibe. Measuring camera translation by the dominant apical angle. In **CVPR 2008: Proceedings of the 2008 IEEE Computer Society**

- Conference on Computer Vision and Pattern Recognition**, page 7, Madison, USA, June 2008. IEEE Computer Society, Omnipress.
- [74] Akihiko Torii, Michal Havlena, and Tomas Pajdla. Omnidirectional image stabilization by computing camera trajectory. In **PSIVT '09: Advances in Image and Video Technology: Third Pacific Rim Symposium**, volume 5414 of **Lecture Notes in Computer Science**, pages 71–82, Berlin, Germany, January 2009. Springer Verlag.
- [75] Martin Bujnak, Zuzana Kukelova, and Tomas Pajdla. 3D reconstruction from image collections with a single known focal length. In **2009 IEEE 12th International Conference on Computer Vision**, pages 351–358, Piscataway, USA, September–October 2009. IEEE Computer Society, IEEE Computer Society.
- [76] Michal Havlena, Akihiko Torii, Jan Knopp, and Tomas Pajdla. Randomized structure from motion based on atomic 3D models from camera triplets. In **CVPR 2009: Proceedings of the 2009 IEEE Computer Society Conference on Computer Vision and Pattern Recognition**, pages 2874–2881, Madison, USA, June 2009. IEEE Computer Society, Omnipress.
- [77] Jan Heller and Tomas Pajdla. Stereographic rectification of omnidirectional stereo pairs. In **CVPR 2009: Proceedings of the 2009 IEEE Computer Society Conference on Computer Vision and Pattern Recognition**, pages 1414–1421, Madison, USA, June 2009. IEEE Computer Society, Omnipress.
- [78] Martin Bujnak, Zuzana Kukelova, and Tomas Pajdla. Robust focal length estimation by voting in multi-view scene reconstruction. In **ACCV 2009: Proceedings of the 9th Asian Conference on Computer Vision, Part I**, volume 5994 of **LNSC**, pages 13–24, Heidelberg, Germany, September 2010. Springer.
- [79] Michal Havlena, Akihiko Torii, and Tomas Pajdla. Efficient structure from motion by graph optimization. In **Computer Vision - ECCV 2010, 11th European Conference on Computer Vision, Proceedings, Part II**, volume 6312 of **Lecture Notes in Computer Science**, pages 100–113, Berlin, Germany, September 2010. Foundation for Research and Technology-Hellas (FORTH), Springer-Verlag.
- [80] Jan Knopp, Josef Sivic, and Tomas Pajdla. Avoiding confusing features in place recognition. In **Computer Vision - ECCV 2010, 11th European Conference on Computer Vision, Proceedings, Part I**, volume 6311 of **LNSC**, pages 748–761, Berlin, Germany, September 2010. Foundation for Research and Technology-Hellas (FORTH), Springer-Verlag.
- [81] Branislav Micusik and Tomas Pajdla. Simultaneous surveillance camera calibration and foot-head homology estimation from human detections. In **CVPR 2010: Proceedings of the 2010 IEEE Computer Society Conference on Computer Vision and Pattern Recognition**, pages 1562–1569, Madison, USA, June 2010. Omnipress.
- [82] Thomas Ruland, Heidi Loose, Tomas Pajdla, and Lars Kruger. Hand-eye autocalibration of camera positions on vehicles. In **ITSC '10: 2010 13th International IEEE Conference on Intelligent Transportation Systems**, pages 367–372, New York, USA, 09 2010. IEEE.
- [83] Tomokazu Sato, Tomas Pajdla, and Naokazu Yokoya. Epipolar geometry estimation for wide-baseline omnidirectional street view images. In **2011 IEEE International Conference on Computer Vision Workshops (ICCV Workshops)**, pages 56–63, Los Alamitos, USA, November 2011. IEEE Computer Society.

- [84] Akihiko Torii, Josef Sivic, and Tomas Pajdla. Visual localization by linear combination of image descriptors. In **2011 IEEE International Conference on Computer Vision Workshops (ICCV Workshops)**, pages 102–109, Los Alamitos, USA, November 2011. IEEE Computer Society.
- [85] Jan Heller, Michal Havlena, Akihiro Sugimoto, and Tomas Pajdla. Structure-from-motion based hand-eye calibration using l-infty minimization. In **CVPR 2011: Proceedings of the 2011 IEEE Computer Society Conference on Computer Vision and Pattern Recognition**, pages 3497–3503, Los Alamitos, USA, June 2011. IEEE Computer Society, IEEE Computer Society.
- [86] Michal Jancosek and Tomas Pajdla. Multi-view reconstruction preserving weakly-supported surfaces. In **CVPR 2011: Proceedings of the 2011 IEEE Computer Society Conference on Computer Vision and Pattern Recognition**, pages 3121–3128, New York, USA, June 2011. IEEE Computer Society, IEEE Computer Society.
- [87] Martin Bujnak, Zuzana Kukelova, and Tomas Pajdla. New efficient solution to the absolute pose problem for camera with unknown focal length and radial distortion. In **ACCV 2010: Proceedings of the 10th Asian Conference on Computer Vision, Part I**, volume 6492 of **LNCS**, pages 11–24, Berlin, Germany, November 2011. Springer.
- [88] Zuzana Kukelova, Martin Bujnak, and Tomas Pajdla. Closed-form solutions to minimal absolute pose problems with known vertical direction. In **ACCV 2010: Proceedings of the 10th Asian Conference on Computer Vision, Part II**, volume 6493 of **LNCS**, pages 216–229, Berlin, Germany, November 2011. Springer.
- [89] Thomas Ruland, Tomas Pajdla, and Lars Kruger. Global optimization of extended hand-eye calibration. In **IV 2011: IEEE 2011 Intelligent Vehicle Symposium**, pages 740–745, Piscataway, USA, June 2011. IEEE, IEEE.
- [90] Thomas Ruland, Tomas Pajdla, and Lars Kruger. Robust hand-eye self-calibration. In **ITSC 2011: 2011 14th International IEEE Conference on Intelligent Transportation Systems**, pages 87–94, Piscataway, USA, October 2011. IEEE.
- [91] Simon Fojtu, Michal Havlena, and Tomas Pajdla. NAO robot localization and navigation using fusion of odometry and visual sensor data. In **Intelligent Robotics and Applications, 5th International Conference, ICIRA 2012**, volume 7507 of **Lecture Notes in Computer Science**, pages 427–438, Berlin, Germany, October 2012. Concordia University, Canada, Springer.
- [92] Daniel Kondermann, Steffen Abraham, Gabriel J. Brostow, Wolfgang Foerstner, Stefan Gehrig, Atsushi Imiya, Bernd Jaehne, Felix Klose, Marcus A. Magnor, Helmut Mayer, Rudolf Mester, Tomas Pajdla, Ralf Reulke, and Henning Zimmer. On performance analysis of optical flow algorithms. In **Outdoor and Large-Scale Real-World Scene Analysis: 15th International Workshop on Theoretical Foundations of Computer Vision**, volume 7474 of **LNCS**, pages 329–355, Berlin, Germany, June-July 2012. Springer-Verlag.
- [93] Robert Marc, Tomas Pajdla, and Luc Joudrier. Sensitivity analysis of virtual terrain accuracy for vision based algorithms. In **Proceedings of the International Astronautical Congress, IAC**, volume 2, pages 1422–1429, 94 bis, Avenue de Suffren, 75015 Paris, France, October 2012. International Astronautical Federation.
- [94] Zuzana Kukelova, Jan Heller, and Tomas Pajdla. Hand-eye calibration without hand orientation measurement using minimal solution. In **ACCV 2012, 11th Asian Conference on Computer Vision**, volume 7727 of **LNCS**, pages 576–589, Tiergartenstrasse 17, 69 121, Heidelberg, Germany, November 2013. Springer.

- [95] Martin Bujnak, Zuzana Kukelova, and Tomas Pajdla. Making minimal solvers fast. In **CVPR 2012: Proceedings of the 2012 IEEE Computer Society Conference on Computer Vision and Pattern Recognition**, pages 1506–1513, New York, USA, June 2012. IEEE Computer Society, IEEE Computer Society Press.
- [96] Jan Heller, Michal Havlena, and Tomas Pajdla. A branch-and-bound algorithm for globally optimal hand-eye calibration. In **CVPR 2012: Proceedings of the 2012 IEEE Computer Society Conference on Computer Vision and Pattern Recognition**, pages 1608–1615, New York, USA, June 2012. IEEE Computer Society, IEEE Computer Society Press.
- [97] Thomas Ruland, Lars Kruger, and Tomas Pajdla. Globally optimal hand-eye calibration. In **CVPR 2012: Proceedings of the 2012 IEEE Computer Society Conference on Computer Vision and Pattern Recognition**, pages 1035–1042, New York, USA, June 2012. IEEE Computer Society, IEEE Computer Society Press.
- [98] Zuzana Kukelova, Pavel Krsek, Vladimir Smutny, and Tomas Pajdla. Groebner basis solutions to satellite trajectory control by pole placement. In **Proceedings of the Advanced Maui Optical and Space Surveillance Technologies Conference**, pages 748–757, Kihei, US, September 2013. Maui Economic Development Board.
- [99] Tanja Schilling and Tomas Pajdla. Euclidean upgrade from a minimal number of segments. In Justus Piater and Antonio J. Rodriguez Sanchez, editors, **Proceedings of the OAGM/AAPR 2013-The 37th Annual Workshop of the Austrian Association for Pattern Recognition**, pages 1–9, JOANNEUM RESEARCH, Forschungsge-sellschaft mbH, Steyrergasse 17, 8010 Graz, Austria, May 2013. Austrian Association for Pattern Recognition.
- [100] Petr Gronat, Guillume Obozinski, Josef Sivic, and Tomas Pajdla. Learning and calibrating per-location classifiers for visual place recognition. In **CVPR: 2013 IEEE Computer Society Conference on Computer Vision and Pattern Recognition**, pages 907–914, Los Alamitos, USA, June 2013. IEEE Computer Society.
- [101] Akihiko Torii, Josef Sivic, Masatoshi Okutomi, and Tomas Pajdla. Visual place recognition with repetitive structures. In **CVPR: 2013 IEEE Computer Society Conference on Computer Vision and Pattern Recognition**, pages 883–890, Los Alamitos, USA, June 2013. IEEE Computer Society.
- [102] Zuzana Kukelova, Martin Bujnak, and Tomas Pajdla. Real-time solution to the absolute pose problem with unknown radial distortion and focal length. In **2013 IEEE International Conference on Computer Vision (ICCV 2013)**, pages 2816–2823, Los Alamitos, US, December 2013. IEEE Computer Society, IEEE Computer Society Press.
- [103] Jan Heller, Didier Henrion, and Tomas Pajdla. Hand-eye and robot-world calibration by global polynomial optimization. In Lynne Parker, editor, **Robotics and Automation (ICRA), 2014 IEEE International Conference on**, pages 3157–3164, Piscataway, USA, May-June 2014. IEEE.
- [104] Simon Fojtu, Karel Zimmermann, Tomas Pajdla, and Vaclav Hlavac. Domain adaptation for sequential detection. In **SCIA 2013: Proceedings of the 18th Scandinavian Conference on Image Analysis**, volume 7944 of **Lecture Notes in Computer Science**, pages 215–224, Heidelberg, Germany, June 2013. Aalto University, Finland, Springer.
- [105] Zuzana Kukelova, Martin Bujnak, and Tomas Pajdla. Fast and stable algebraic solution to l2 three-view triangulation. In **3DV 2013 – International Conference on 3D Vision**, pages 326–333, Los Alamitos, USA, June 2013. IEEE Computer Society, IEEE Computer Society Press.

- [106] Jan Heller, Didier Henrion, and Tomas Pajdla. Stable radial distortion calibration by polynomial matrix inequalities programming. In **ACCV 2014, 12<sup>th</sup> Asian Conference in Computer Vision**, volume 9003 of **Lecture Notes in Computer Science**, pages 307–321. Springer International Publishing, Gewerbstrasse 11, CH-6330 Cham (ZG), Switzerland, November 2015.
- [107] Zuzana Kukelova, Martin Bujnak, Jan Heller, and Tomas Pajdla. Singly-bordered block-diagonal form for minimal problem solvers. In **ACCV 2014, 12<sup>th</sup> Asian Conference in Computer Vision**, volume 9004 of **Lecture Notes in Computer Science**, pages 488–502. Springer International Publishing, Gewerbstrasse 11, Cham, Switzerland, November 2015.
- [108] Filip Srajer, Alexander G. Schwing, Marc Pollefeys, and Tomas Pajdla. MatchBox: Indoor Image Matching via Box-like Scene Estimation. In Lisa O’Conner, editor, **3DV 2014: International Conference on 3D Vision**, pages 705–712, Los Alamitos, USA, December 2014. IEEE Computer Society Press.
- [109] Jan Heller and Tomas Pajdla. World-base calibration by global polynomial optimization. In Lisa O’Conner, editor, **3D Vision (3DV), 2014 2nd International Conference on**, volume 1, pages 593–600, Piscataway, USA, Dec 2014. IEEE.
- [110] Cenek Albl and Tomas Pajdla. Global camera parameterization for bundle adjustment. In **VISAPP’14: Proceedings of the 9th International Conference on Computer Vision Theory and Applications**, volume 3, pages 555–561, Porto, Portugal, January 2014. SciTePress - Science and Technology Publications.
- [111] Jan Heller, Michal Havlena, Michal Jancosek, Akihiko Torii, and Tomas Pajdla. 3D reconstruction from photographs by CMP SfM web service. In **Machine Vision Applications (MVA), 2015 14th IAPR International Conference on**, pages 30–34, Piscataway, NJ, May 2015. IEEE.
- [112] Akihiko Torii, Relja Arandjelovic, Masatoshi Sivic, Josef Okutomi, and Tomas Pajdla. 24/7 place recognition by view synthesis. In **CVPR 2015 IEEE Computer Society Conference on Computer Vision and Pattern Recognition**, pages 1808–1817, Los Alamitos, USA, June 2015. IEEE Computer Society.
- [113] Zuzana Kukelova, Jan Heller, Martin Bujnak, and Tomas Pajdla. Radial distortion homography. In **CVPR 2015 IEEE Computer Society Conference on Computer Vision and Pattern Recognition**, pages 639–647, Los Alamitos, USA, June 2013. IEEE Computer Society.
- [114] Cenek Albl, Zuzana Kukelova and Tomas Pajdla. R6P – rolling shutter absolute camera pose. In **CVPR 2015 IEEE Computer Society Conference on Computer Vision and Pattern Recognition**, pages 2292–2300, Los Alamitos, USA, June 2015. IEEE Computer Society. **(Oral)**
- [115] Zuzana Kukelova, Jan Heller, Martin Bujnak, Andrew Fitzgibbon, Tomas Pajdla. Efficient Solution to the Epipolar Geometry for Radially Distorted Cameras. **ICCV 2015 - IEEE International Conference on Computer**, Santiago de Chile, Chile, December 2015. IEEE.
- [116] Relja Arandjelovic, Petr Gronat, Akihiko Torii, Tomas Pajdla, Josef Sivic. NetVLAD: CNN architecture for weakly supervised place recognition. **CVPR 2016 IEEE Computer Society Conference on Computer Vision and Pattern Recognition**, Las Vegas, USA, June 2016. IEEE. **(Oral)**.

- [117] Cenek Albl, Zuzana Kukelova, Tomas Pajdla. R5Pup - Rolling shutter absolute pose problem with known vertical direction. **CVPR 2016 IEEE Computer Society Conference on Computer Vision and Pattern Recognition**, Los Alamitos, USA, June 2016. IEEE Computer Society.
- [118] Cenek Albl, Akihiro Sugimoto, Tomas Pajdla. Rolling Shutter SFM. **ECCV 2016 – European Conference on Computer Vision**. Springer 2016.