Jan Heller

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Professional Interests

Digital cameras—geometry and calibration, polynomial optimization, structure-from-Motion, 3D reconstruction

Education

2008–2015	**Ph.D.**, *Faculty of Electrical Engineering, Czech Technical University*, Prague.
Thesis Title	Global Optimization Techniques in Camera-Robot Calibration
Supervisor	Ing. Tomáš Pajdla, Ph.D.
2001–2008	**Master (Mgr.)**, *Faculty of Mathematics and Physics, Charles University*, Prague.
Thesis Title	Stereo Reconstruction from Wide-angle Images
Supervisor	Ing. Tomáš Pajdla, Ph.D.

Scientific Interships

Jul 2013	**Internship**, *The Laboratory of Analysis and Architecture of Systems (LAAS)*, Toulouse, France.
Sep 2010–Nov 2010	**Internship**, *National Institute of Informatics (NII)*, Tokyo, Japan.
Nov 2009	**Internship**, *University of Ljubljana*, Ljubljana.
Sep 2006–Jan 2007	**Erasmus**, *Universitaat des Saarlandes*, Saarbuecken.

Academic Service

2014	Program Co-chair, *19th Computer Vision Winter Workshop (CVWW) 2014*
Reviewer (journals)	IEEE Transactions on Pattern Analysis and Machine Intelligence, Image and Vision Computing.
Reviewer (conferences)	IEEE Conference on Computer Vision and Pattern Recognition (CVPR), IEEE International Conference on Computer Vision (ICCV).

Teaching Experience

2008–present	**exercises**, *Faculty of Electrical Engineering, Czech Technical University*, Prague.
A3M33IRO	Inteligent Robotics
X383ZS	Signal and Image processing
A4B33OPT	Optimization

Work Experience

Jul 2005–Sep 2006 **Software Engineer**, *Sun Microsystems*, Praha, Software Testing and Quality Assurance.

Jun 2004–Jul 2005 **Tester**, *Sun Microsystems*, Praha, Software Testing and Quality Assurance.

Miscellaneous

Languages Czech (native), English (fluent), German, French (basic)

Programming Languages C, C++, Matlab, Perl, Java, Bash, SQL

Publications

Journals (IF).

2016 **Jan Heller**, Tomas Pajdla. GpoSolver: A Matlab/C++ Toolbox for Global Polynomial Optimization. *Optimization Methods and Software (OMS)*.

2015 **Jan Heller**, Michal Havlena and Tomas Pajdla. Globally Optimal Hand-Eye Calibration Using Branch-and-Bound. *IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI)*.

Conferences.

2016 Zuzana Kukelova, **Jan Heller**, Andrew Fitzgibbon. Efficient Intersection of Three Quadrics and Applications in Computer Vision. *In IEEE Computer Vision and Pattern Recognition (CVPR)*, IEEE, June, 2016.

2015 Zuzana Kukelova, **Jan Heller**, Martin Bujnak, Andrew Fitzgibbon, Tomas Pajdla. Efficient Solution to the Epipolar Geometry for Radially Distorted Cameras. *In IEEE International Conference on Computer Vision (ICCV)*, IEEE, December, 2015.

2015 Zuzana Kukelova, **Jan Heller**, Martin Bujnak, Tomas Pajdla. Radial distortion homography. *In IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, IEEE, June, 2015.

2015 **Jan Heller**, Michal Havlena, Michal Jancosek, Akihiko Torii,Tomas Pajdla. 3D Reconstruction from Photographs by CMP SfM Web Service.*In IAPR International Conference on Machine Vision Applications (MVA)*, pages 30–34, 2015.

2014 **Jan Heller**, Tomas Pajdla. World-base calibration by global polynomial optimization. *In IEEE 2nd International Conference on 3D Vision (3DV)*, pages 593–600. IEEE, December, 2014.

2014 **Jan Heller**, Didier Henrion, Tomas Pajdla. Stable radial distortion calibration by polynomial matrix inequalities programming. *In Asian Conference on Computer Vision (ACCV)*, pages 307-321. Springer, November, 2014.

2014 Zuzana Kukelova, Martin Bujnak, **Jan Heller**, Tomas Pajdla. Singly-bordered block-diagonal form for minimal problem solvers. *In Asian Conference on Computer Vision (ACCV)*, pages 488–502. Springer, November, 2014.

2014 **Jan Heller**, Didier Henrion, and Tomas Pajdla. Hand-eye and robot-world calibration by global polynomial optimization. *In IEEE International Conference on Robotics and Automation (ICRA)*, pages 3157–3164. IEEE, May, 2014.

2012 Zuzana Kukelova, **Jan Heller**, and Tomas Pajdla. Hand-eye calibration without hand orientation measurement using minimal solution. *In Asian Conference on Computer Vision (ACCV)*, pages 576–589. Springer, November, 2012.

2012 **Jan Heller**, Michal Havlena, and Tomas Pajdla. A branch-and-bound algorithm for globally optimal hand-eye calibration. *In IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, pages 1608–1615. IEEE, June, 2012.

2011 **Jan Heller**, Michal Havlena, Akihiro Sugimoto, and Tomas Pajdla. Structure-from-motion based hand-eye calibration using L_∞ minimization. *In IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, pages 3497–3503. IEEE, June, 2011.

2009 **Jan Heller**, Tomas Pajdla. Stereographic rectification of omnidirectional stereo pairs. *In IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, pages 1414–1421. IEEE, June, 2009.