

Hyperlinks to all publications are provided by this publication list online available at: <https://www.caa.tuwien.ac.at/cvl/staff/roman-pflugfelder/>.

Six Publication Highlights

A survey of nine Siamese networks for tracking including a deep qualitative and quantitative analysis. Introducing a Lisp like novel formalism to illustrate and compare the trackers: **Aug. 2018** R. Pflugfelder. “An In-Depth Analysis of Visual Tracking with Siamese Neural Networks”. arXiv. [Link](#).

Work on benchmarking standards for short-term single-object one-shot visual tracking and the VOT Visual Object Tracking challenges: **Nov. 2016** (with Matej Kristan et al.). “A Novel Performance Evaluation Methodology for Single-Target Trackers”. In: *IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI)* 38.11, pp. 2137–2155. [Link](#).

One-shot object tracking method based on the ideas of independent keypoints and their consensus during motion; preliminary work won the best paper award at the IEEE WACV 2014 conference: **June 2015** (with Georg Nebehay). “Clustering of Static-Adaptive Correspondences for Deformable Object Tracking”. In: *Proceedings of the Conference on Computer Vision and Pattern Recognition (CVPR)*. [Link](#).

Patent on calibrating very distant security cameras by reconstructing the environment and localising the embedded cameras: **Oct. 2012** (with Branislav Micusik). *EP 12791682 Method for determining the position of cameras*. [Link](#).

Work on simultaneous object tracking, trajectory reconstruction and camera self-calibration with walking humans and security cameras having non overlapping fields of view: **Apr. 2010** (with Horst Bischof). “Localization and Trajectory Reconstruction in Surveillance Cameras with Nonoverlapping Views”. In: *IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI)* 32.4, pp. 709–721. [Link](#).

Work describing necessary design choices for applying visual object tracking in tunnel traffic monitoring: **Dec. 2000**. “A comparison of visual feature tracking methods for traffic monitoring”. In: *ÖGAI Journal* 19.4, pp. 15–22. [Link](#).

Peer-Reviewed Journals

- [1] **Nov. 2016** (with Matej Kristan et al.). “A Novel Performance Evaluation Methodology for Single-Target Trackers”. In: *IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI)* 38.11, pp. 2137–2155. [Link](#).
- [2] **July 2015** (with Bernhard Rinner et al.). “Self-Aware and Self-Expressive Camera Networks”. In: *IEEE Computer* 48.7, pp. 21–28. [Link](#).

- [3] **Apr. 2010** (with Horst Bischof). “Localization and Trajectory Reconstruction in Surveillance Cameras with Nonoverlapping Views”. In: *IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI)* 32.4, pp. 709–721. [Link](#).
- [4] **Apr. 2004** (with Bernhard Rinner et al.). “Eine intelligente Kamera zur Verkehrsüberwachung”. In: *Bulletin SEV/VSE* 95.11, pp. 19–23. [Link](#).
- [5] **Dec. 2000**. “A comparison of visual feature tracking methods for traffic monitoring”. In: *ÖGAI Journal* 19.4, pp. 15–22. [Link](#).

Peer-Reviewed Books

- [6] **2016** (with Lukas Esterle et al.). “Self-aware Object Tracking in Multi-Camera Networks”. In: *Self-aware Computing Systems: An Engineering Approach*. Ed. by Peter Lewis et al. Springer, pp. 261–277. [Link](#).
- [7] **2012** (with Cristina Picus, and Branislav Micusik). “Auto-calibration of Non-overlapping Multi-camera CCTV Systems”. In: *Video Analytics for Business Intelligence*. Ed. by Caifeng Shan, Fatih Porikli, Tao Xiang, and Shaogang Gong. Vol. 409. Studies in Computational Intelligence. Springer, pp. 43–67. [Link](#).
- [8] **2010** (with Branislav Micusik). “Self-Calibrating Cameras in Video Surveillance”. In: *Smart Cameras*. Ed. by Ahmed Nabil Belbachir. Springer, pp. 161–179. [Link](#).

Patents

- [9] **Oct. 2012** (with Branislav Micusik). *EP 12791682 Method for determining the position of cameras*. [Link](#).
- [10] **Dec. 2011** (with Ahmed Nabil Belbachir, and Manfred Mayerhofer). *DE 102011120718.3 Vorrichtung zur Aufnahme von 360° Stereo Panoramabildern*. [Link](#).
- [11] **Oct. 2011** (with Branislav Micusik). *AT 511968 Verfahren zur Bestimmung der Position von Kameras*. [Link](#).
- [12] **July 2010** (with Ahmed Nabil Belbachir, Norbert Brändle, and Csaba Beleznai). *AT 507764 Verfahren zur Detektion von Objekten*. [Link](#).
- [13] **Oct. 2009** (with Ahmed Nabil Belbachir). *EP 2182720 Method and device for taking pictures*. [Link](#).
- [14] **Oct. 2008** (with Ahmed Nabil Belbachir). *AT 507543 Verfahren und Vorrichtung zur Aufnahme von Bildern*. [Link](#).
- [15] **Sept. 2005** (with Horst Bischof). *AT 502356 Verfahren zur automatischen Ermittlung der Kalibrierung und Projektion einer Überwachungskamera*. [Link](#).

Peer-Reviewed Conferences

- [16] **Sept. 2018** (with Matej Kristan et al.). “Proceedings of the European Computer Vision Workshops (ECCVW)”. In: The Visual Object Tracking VOT2018 Challenge Results.

- [17] **Oct. 2017** (with Matej Kristan et al.). “The Visual Object Tracking VOT2017 Challenge Results”. In: *Proceedings of the International Conference on Computer Vision Workshops (ICCVW)*. [Link](#).
- [18] **Oct. 2016** (with Michael Felsberg et al.). “The Thermal Infrared Visual Object Tracking VOT-TIR2016 Challenge Results”. In: *Proceedings of the European Computer Vision Workshops (ECCVW)*. [Link](#).
- [19] **Oct. 2016** (with Matej Kristan et al.). “The Visual Object Tracking VOT2016 Challenge Results”. In: *Proceedings of the European Conference on Computer Vision Workshops (ECCVW)*. [Link](#).
- [20] **Sept. 2016** (with Axel Weissenfeld, Andreas Opitz, and Gustavo Fernandez Dominguez). “Architecture for Dynamic Allocation of Computer Vision Tasks”. In: *Proceedings of the International Conference on Distributed Smart Camera (ICDSC)*. [Link](#).
- [21] **Dec. 2015** (with Michael Felsberg et al.). “The Thermal Infrared Visual Object Tracking VOT-TIR2015 Challenge Results”. In: *Proceedings of the International Conference on Computer Vision Workshops (ICCVW)*. [Link](#).
- [22] **Dec. 2015** (with Matej Kristan et al.). “The Visual Object Tracking VOT2015 Challenge Results”. In: *Proceedings of the International Conference on Computer Vision Workshops (ICCVW)*. [Link](#).
- [23] **June 2015** (with Georg Nebehay). “Clustering of Static-Adaptive Correspondences for Deformable Object Tracking”. In: *Proceedings of the Conference on Computer Vision and Pattern Recognition (CVPR)*. [Link](#).
- [24] **Sept. 2014** (with Peter Gemeiner, and Branislav Micusik). “Calibration Methodology for Distant Surveillance Cameras”. In: *Proceedings of the European Conference on Computer Vision Workshops (ECCVW)*. [Link](#).
- [25] **Sept. 2014** (with Matej Kristan et al.). “The Visual Object Tracking VOT2014 Challenge Results”. In: *Proceedings of the European Conference on Computer Vision Workshops (ECCVW)*. [Link](#).
- [26] **Feb. 2014** (with Matej Kristan et al.). “The VOT2013 challenge: overview and additional results”. In: *Proceedings of the Computer Vision Winter Workshop (CVWW)*. [Link](#).
- [27] **2014** (with Georg Nebehay). “Consensus-based Matching and Tracking of Keypoints for Object Tracking”. In: *Proceedings on the Winter Conference on Applications of Computer Vision (WACV)*. [Link](#).
- [28] **Oct. 2013** (with Bernhard Dieber et al.). “Ella: Middleware for Multi-camera Surveillance in Heterogeneous Visual Sensor Networks”. In: *Proceedings of the International Conference on Distributed Smart Cameras (ICDSC)*. [Link](#).
- [29] **Dec. 2013** (with Matej Kristan et al.). “The Visual Object Tracking VOT2013 Challenge Results”. In: *Proceedings of the International Conference on Computer Vision Workshops (ICCVW)*. [Link](#).
- [30] **Oct. 2013** (with Georg Nebehay). “TLM: Tracking-Learning-Matching of Keypoints”. In: *Proceedings of the International Conference on Distributed Smart Cameras (ICDSC)*. [Link](#).
- [31] **2013** (with Georg Nebehay et al.). “Can Diversity amongst Learners Improve Online Object Tracking”. In: *Proceedings of the International Multiple Classifier Systems Workshop (MCS)*. [Link](#).
- [32] **Sept. 2011** (with Tobias Becker et al.). “Hardware Accelerated object Tracking”. In: *Proceedings of the International Conference on Field Pro-*

- grammable Logic and Applications (FPL) Workshop on Computer Vision on Low-Power Reconfigurable Architectures*. [Link](#).
- [33] **Nov. 2011** (with Cristina Picus, and Branislav Micusik). “Branch and bound global optima search for tracking a single object in a network of non-overlapping cameras”. In: *Proceedings of the International Conference on Computer Vision Workshops (ICCVW)*. [Link](#).
- [34] **Sept. 2010** (with Nabil Belbachir, and Roman Gmeiner). “A Neuromorphic Smart Camera for Real-time 360° Distortion-free Panoramas”. In: *Proceedings of the International Conference on Distributed Smart Cameras (ICDSC)*. [Link](#).
- [35] **June 2010** (with Branislav Micusik). “Localizing non-overlapping surveillance cameras under the L-Infinity norm”. In: *Proceedings of the Conference on Computer Vision and Pattern Recognition (CVPR)*. [Link](#).
- [36] **May 2010** (with Anton Walzl, Bernhard Schalko, and Gustavo Fernandez Dominguez). “Digital Video Surveillance in Road Tunnels”. In: *Proceedings of the International Conference on Tunnel Safety and Ventilation*. [Link](#).
- [37] **Sept. 2010** (with Cristina Picus, and Branislav Micusik). “From Single Cameras to the Camera Network: An Auto-Calibration Framework for Surveillance”. In: *Proceedings of the Annual Symposium of the German Association for Pattern Recognition (DAGM)*. [Link](#).
- [38] **Sept. 2009** (with Georg Nebel). “A self-calibration method for smart video cameras”. In: *Proceedings of the International Conference on Computer Vision Workshops (ICCVW)*. [Link](#).
- [39] **Dec. 2008** (with Horst Bischof). “Tracking across non-overlapping views via geometry”. In: *Proceedings of the International Conference on Pattern Recognition (ICPR)*. [Link](#).
- [40] **Sept. 2007** (with Horst Bischof). “People tracking across two distant self-calibrated cameras”. In: *Proceedings of the International Conference on Advanced Video and Signal Based Surveillance (AVSS)*. [Link](#).
- [41] **Aug. 2006** (with Dietmar Bauer, Norbert Brändle, and Stefan Seer). “Finding Highly Frequent Paths in Video Sequences”. In: *Proceedings of the International Conference on Pattern Recognition (ICPR)*. [Link](#).
- [42] **Feb. 2006** (with Horst Bischof). “Computation of the epipolar geometry in slightly overlapping views”. In: *Proceedings of the Computer Vision Winter Workshop (CVWW)*. [Link](#).
- [43] **Aug. 2006** (with Horst Bischof). “Fundamental matrix and slightly overlapping views”. In: *Proceedings of the International Conference on Pattern Recognition (ICPR)*. [Link](#).
- [44] **Dec. 2005** (with Horst Bischof). “Online Auto-Calibration in Man-Made Worlds”. In: *Proceedings of the International Conference on Digital Image Computing: Techniques and Applications (DICTA)*. [Link](#).
- [45] **Sept. 2005** (with Horst Bischof, et al.). “Influence of camera properties on image analysis in visual tunnel surveillance”. In: *Proceedings of the Intelligent Transportation Systems Conference (ITSC)*. [Link](#).
- [46] **Nov. 2005** (with Helmut Schwabach et al.). “Video Based Image Analysis for Tunnel Safety - VITUS-1: A Tunnel Video Surveillance and Traffic Control System”. In: *Proceedings of the 12th World Congress on Intelligent Transport Systems*. [Link](#).

- [47] **June 2004** (with Horst Bischof). “Vanishing points and lorries”. In: *Proceedings of the Workshop of the Austrian Association for Pattern Recognition (AAPR)*. [Link](#).
- [48] **June 2003** (with Michael Bramberger et al.). “A Smart Camera for Traffic Surveillance”. In: *Proceedings of the Workshop on Intelligent Solutions in Embedded Systems (WISES)*. [Link](#).
- [49] **Mar. 2003** (with Michael Bramberger et al.). “Intelligent Traffic Video Sensor: Architecture and Applications”. In: *Proceedings of the Workshop on Telecommunications and Mobile Computing (TCMC)*. [Link](#).
- [50] **Sept. 2002** (with Horst Bischof). “Learning spatiotemporal traffic behaviour and traffic patterns for unusual event detection”. In: *Proceedings of the Workshop of the Austrian Association for Pattern Recognition (AAPR)*. [Link](#).
- [51] **Feb. 2000** (with Horst Bischof). “Car tracking in tunnels”. In: *Proceedings of the Computer Vision Winter Workshop (CVWW)*. [Link](#).

Other Publications

- [52] **Aug. 2018** R. Pflugfelder. “An In-Depth Analysis of Visual Tracking with Siamese Neural Networks”. arXiv. [Link](#).
- [53] **July 2017** R. Pflugfelder. “Siamese Learning Visual Tracking: A Survey”. arXiv. [Link](#).
- [54] **Mar. 2011** (with Georg Nebhay, Branislav Micusik, and Cristina Picus). “Evaluation of an online learning approach for robust object tracking”. Technical Report, AIT Austrian Institute of Technology. [Link](#).
- [55] **May 2008**. “Self-calibrating Cameras in Video Surveillance”. Ph.D. thesis, Graz University of Technology. [Link](#).
- [56] **Feb. 2007** (with Nikolaus Viertl). “Automatic Calibration of the Velocity in Tunnels”. Project Report. [Link](#).
- [57] **Jan. 2002**. “Visual Traffic Surveillance Using Real-time Tracking”. MSc thesis, Vienna University of Technology. [Link](#).
- [58] **May 2002**. “Visual Traffic Surveillance Using Real-time Tracking”. Technical Report 71, Vienna University of Technology. [Link](#).
- [59] **June 2002**. “Visuelle Verkehrsüberwachung in intelligenten Transportsystemen”. Technical Report 73, Vienna University of Technology. [Link](#).
- [60] **May 2000** (with Remi Megret et al.). “Motion Estimation with combined Mesh/Region Motion Models”. Erasmus Intensive Programme Report INSA Lyon. [Link](#).
- [61] **Nov. 1999**. “An Introduction to GA Theory”. Seminarwork, Vienna University of Technology Vienna. [Link](#).