

Curriculum Vitae



Personal Information

Name Roman Peter Pflugfelder
Date of birth 18 July 1974
Citizenship Austria
Marital status Married, one child

Highlights

- 18 year's experience in computer vision and machine learning including motion analysis and tracking, multi-view geometry and recognition
- Outstanding initiator and bridge builder between science and economy with acquired third-party funding of 2.4 Mio. Euro since 2003
- Initiated 2012 the Visual Object Tracking Challenge (VOT)
- Led 6-person team that studied object tracking and camera calibration with non-overlapping camera views; applied results with companies to video surveillance, indoor navigation and robotics
- Inventor of patented rotating event camera and patented calibration of non-overlapping cameras based on structure-from-motion
- Throughout knowledge of technology and innovation processes

Education

2003 – 2008
Doctorate studies in Technical Sciences with distinction
Technical University Graz, Austria

Society for Information and Communication Technologies of the Austrian Electrotechnical Association (OVE-GIT) award 2009 for the thesis "Self-calibrating Cameras in Video Surveillance", advisor Prof. Horst Bischof, referee Prof. James Ferryman (University of Reading, UK)

Attended International Computer Vision Summer School 2008, Sicily

1994 – 2002
Diploma studies in Informatics with distinction (GPA 3.74/4)
Technical University Vienna, Austria

Institute's award 2001 (Prof. Walter Kropatsch) for the best thesis "Visual Traffic Surveillance Using Real-time Tracking"; first scientific work in Austria that applied computer vision to traffic monitoring

Self-composed elective subject "Soft Computing" including Neural Networks, Evolutionary Computation and Fuzzy Logic

Abroad studies:

- 10/2000 - 04/2001: won competitive Kurt Gödel Scholarship, University of Queensland, Brisbane, Australia, Prof. Brian Lovell
- 05/2000: invited for EU Erasmus Intensive Program Scholarship, INSA, Lyon, France, Prof. Jean-Michel Jolion

1993 – 1994
Military Service Starhemberg Casern, Clerk (Battalion), rank: Private

1988 – 1993 High school diploma in Business Informatics with distinction (GPA 3.81/4)
Technical Secondary School HTL Donaustadt, Vienna, Austria
Obtained trade authorisation; completed REFA Part A; training firm was part of the curriculum

1984 – 1988 Gymnasium BRG 4 Waltergasse, Vienna

Professional Experience

04/2007 – present AIT Austrian Institute of Technology
Center for Digital Safety and Security
Scientist and Project Manager

Work on siamese networks and attention for visual tracking; work on theoretical considerations of visual learning, feature learning

- Co-acquired EU Foldout project “Through-foliage detection, including in the outermost regions of the EU”, 1,8 Mio. Euro (2018-2022), 19 partners
- Co-acquired EU Artemis project “EMC2 Embedded Multi-Core Cloud”, 230.671 Euro (2013 – 2017); 101 commercial and academic partners; initiated research with TTTech’s Time Triggered Architecture (TTA) for deterministic networks of cameras in cyberphysical systems
- Coordinated AIT programme “Mobile Vision” with TU Graz, Uni Klagenfurt, 2.1 Mio. Euro (2012 – 2016); set up and managed strategic programme to work with Austrian universities and to strengthen Austrian computer vision research; developed selection process of foundation professorship
- Acquired and coordinated Research Promotion Agency (FFG) project “Passenger Flow Monitoring for Enhancing Airport Safety and Efficiency Using a Large Network of Surveillance Cameras”, 528.100 Euro (2012 – 2015); wrote proposal and managed the project; studied with Munich airport, SLR Engineering GmbH and AIT Mobility the use of existing security cameras for passenger flow monitoring; developed and successfully field-tested a calibration method for distant security cameras allowing oblique camera views; patented the method in EU
- Led task in EU FET PROACTIVE project “Engineering Proprioception in Computing Systems” (2010 – 2014); studied with Georg Nebhay parts-based and long-term tracking; CMT was awarded best paper; our TLD implementation has 1.100+ forks on Github and is part of ROS; NASA, FESTO AG and Neurala Inc. used the results in their projects
- Acquired and coordinated Vienna Science and Technology Fund (WWTF) Career Grant “Simultaneous Calibration and Tracking: A joint optimisation approach for arbitrarily placed cameras”, 492.000 Euro (2009 – 2012); wrote proposal and received as principal investigator prestigious career grant (top 15%); studied camera calibration and object tracking jointly; formulated polynomial eigenvalue problem and developed (Matlab) several approaches based on SOCP, branch-and-bound; published at major conferences (CVPR, ICCV, DAGM) and in a Springer book; technique got awareness by Frost & Sullivan in their TI newsletter

10/2003 – 03/2007 Technical University Graz
 Institute of Computer Graphics and Vision
 Research Assistant

- Acquired and coordinated of FFG Young Experts Ph.D. Grant “Plug & Detect: Self-calibrating and self-configuring video surveillance”, 108.900 Euro (2003 - 2007); wrote proposal and managed the project; developed (Matlab, C) calibration method for single cameras based online segment; published work in Ph.D. thesis, TPAMI; patented the method in Austria
- Co-acquired and led task in Ministry for Transport, Innovation and Technology I2 project “Video based Image analysis for Tunnel Safety”, 262.680 Euro (2004); initiated the project; planned experimental methodology; led tunnel experiments with Asfinag and TU Graz

04/2002 – 09/2003 Technical University Vienna
 Institute of Computer-aided Automation
 Research Assistant

- Established licensing agreement with FLIR Traficon, 578.000 Euro; developed contact to Traficon and initiated contract research
- Acquired EU FP6 project “Aircraft surroundings, categorised Vehicles and Individuals Tracking for apron’s Activity model interpretation and Check” 152.022 Euro (2004 - 2006); established contact to project coordinator
- Worked on automated traffic monitoring; developed (Matlab, C) methods based on keypoint trackers (KLT) and based on robust competitive unsupervised learning (neural gas, k-means, MDL) for anomaly detection

Professional Training

2017 Feedback Skills, BrainGrow, Dagmar Hinner-Hofstätter
 2017 IPMA Level D, zJPM certified
 2016 Projectmanagement, Primas Consulting, Andreas Goldschmid
 2014 Mentaltraining für Führungskräfte (management training), Prof. Karl Stifter
 2012 Strategic Selling and Analysis, Bernhard Knapp Organisationsberatung
 2011 Projektentwicklung und Antragstellung im 7. EU-Rahmenprogramm (research projects in EU FP7), FFG
 2010 WWTF-Patentworkshop
 2009 How to write a competitive proposal for EU FP7, Hyperion, Sean McCarthy
 1991 Strategisches Management in der Praxis, Austrian Industries, Georg Turnheim

Languages

German Native
 English C2 - business fluent
 French A1 - beginner

Technical Skills

Excellent Matlab (15+ years), C/C++ (25+ years), Latex (15+ years)
 Good MS Office, Mac OS, Linux, Windows

Basic	Python (1 year), pyTorch (1 month)
Teaching Experience	
1998 – present	<p>Technical University Vienna Student Tutor and Lecturer</p> <ul style="list-style-type: none"> ▪ Hold lecture “Machine Learning for Visual Computing”, 3.0h (4.5EC) ▪ Tutored Einführung in das Programmieren für Anwender, Einführung in das Programmieren (intro. to programming) ▪ Tutored Neuronale Netze (neural networks) ▪ Tutored Anwendungen der Bildverarbeitung (app. of image proc.) ▪ Tutored Einführung in die Mustererkennung (intro. to pattern rec.) ▪ Tutored Bildverstehen (image understanding)
11/2010	<p>University of Applied Sciences BFI Vienna Lecturer</p> <p>Held lecture on “Human Computer Interfaces”</p>
Student Supervision	
Ph.D.	<ul style="list-style-type: none"> ▪ Georg Nebehay, A Deformable Parts Model for One-Shot Object Tracking, Ph.D. thesis, TU Graz, 2016; now at Locatee AG, Zurich
M.Sc.	<ul style="list-style-type: none"> ▪ Georg Sperl, Person Classification with Convolutional Neural Networks, M.Sc. thesis, TU Vienna, 2016; now Ph.D. student at IST Austria, Vienna ▪ Timo Kropp, Matching Omnidirectional Images in Indoor Environments, M.Sc. thesis, TU Vienna, 2013, now at MeisterLabs GmbH, Vienna ▪ Georg Nebehay, Robust Object Tracking Based on Tracking-Learning-Detection, M.Sc. thesis, TU Vienna, 2012
B.Sc.	<ul style="list-style-type: none"> ▪ Clemens Korner, Object Tracking Using Projective Invariants, B.Sc. thesis, TU Vienna, 2016, now M.Sc. student at TU Vienna ▪ Michael Boula, Time sync. of networked cameras with non-overlapping views using TTA, BSc. thesis, TU Vienna, 2011 ▪ Timo Kropp, Visualisierung von Trajektorien live in Microsoft Bing Maps, B.Sc. thesis, TU Vienna, 2009
Scientific Awards	
03/2014	<p>IEEE Winter Conference on Applications in Computer Vision (WACV) Best Paper Award</p>
Activities and Memberships	

2008 – present	<p>Reviewer</p> <p>ACM Transaction on Embedded Computing Austr. Association for Pattern Recognition conference (OAGM) Computer Vision and Image Understanding Computer Vision Winter Workshop (CVWW) IEEE Trans. on Pattern Analysis and Machine Intelligence IEEE Trans. on Circuits and Systems for Video Technology IEEE Trans. on Image Processing IEEE Signal Processing Letters IEEE Trans. on Instrumentation and Measurement IEEE Intelligent Systems Int. Conf. on Computer Vision and Pattern Recognition (CVPR) Int. Conference on Computer Vision (ICCV) Int. Conference on Robotics and Automation (ICRA) Int. Conference on Intelligent Transport Systems Int. Conference on Distributed Smart Cameras (ICDSC) Int. Conf. on Adv. Video and Signal-based Surveillance (AVSS) Journal of Mathematical Imaging and Vision Journal of the Optical Society of America Journal of Electronic Imaging Machine Vision and Applications Neurocomputing Optics and Lasers in Engineering Pattern Recognition Signal, Image and Video Processing Workshop on Target Re-Id. and Multi-Target Multi-Cam. Track. (REID-MTMCT)</p>
2011 – present	<p>Workshop Organizer</p> <ul style="list-style-type: none"> ▪ Workshop on VOT in conjunction with ICCV'13, European Conference on Computer Vision (ECCV'14), ECCV'16 and ICCV'17 ▪ Computer Vision in Applications Workshop in conjunction with Deutsche Arbeitsgemeinschaft für Mustererkennung conference (DAGM'12) ▪ Industrial Surveillance Day, symposium in conjunction with AVSS'11
2007 – present	<p>Member of Technical Program Committee</p> <ul style="list-style-type: none"> ▪ Workshop on Target Re-Identification and Multi-Target Multi-Camera Tracking (ReID-MTMCT), 2017 ▪ AVSS (2016 – present) ▪ CVWW (2012 – present) ▪ OAGM (2010 – present) ▪ ICDSC (2007 – present)
2005 – present	Member of OAGM
2004 – present	Member of the IEEE and IEEE Computer Society
2015 – present	AVSS, Steering Committee Member
2015	AVSS, Program Chair
2015	VOT in conjunction with ICCV'15, Member of Technical Committee
2014	ICDSC, Demo Chair

2011	AVSS, Industrial Chair
2009	CONICYT Chilean Science Foundation, Evaluator
2007	ICDSC, Local Arrangements Chair

Perchtoldsdorf, Tuesday, 27. February 2018

Roman Pflugfelder
Eisenhüttelgasse 21, 2380 Perchtoldsdorf, Austria
+43 (0)699 11674334
roman.pflugfelder@gmail.com