FATIH PORIKLI

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I have conceived, pitched, negotiated and delivered numerous computer vision projects to corporate and government clients. I have driven the creation of key technologies and directly contributed to actual products for a broad spectrum of applications including autonomous navigation, driver monitoring, video surveillance, consumer electronics, industrial inspection, medical, satellite, defense, and power generation systems.

I understand how to create value through analyzing visual data and distinguish real capability from marketing hyperbole, and have the technical skills to deliver meaningful results in complex environments.

My work and the success of the groups I led in the past reveal my technical and people leadership abilities. I built capable research and development teams that exceeded expectations, and I line-managed team leaders, senior researchers and engineers.

HIGHLIGHTS:

- **IEEE Fellow** for contributions to computer vision and video surveillance (Computer Society)
- Inventor of **73** US patents (all granted)
- Winner of the **R&D100 Award**, category: Scientist of the Year (select group of winners), 2006
- Contributed technology for multiple products (with estimated gross sales of $1.1B)
- Won **6** Best Paper Awards
- Won **5** Professional Awards
- Google Scholar h-index: **50**, i10-index: **133**
- Published **200+** papers that received **12,000+** citations
- Associate Editor of **6** Journals (IEEE SPM: impact factor 6.0, SIIMS: rank 2/236 in applied math)
- World leading expert in **Deep Learning** (see my IEEE Spectrum interviews)
  - Applied deep learning to classification, object detection/localization, tracking, saliency, proposal generation, super-resolution, stylization, domain adaptation, denoising, depth estimation, segmentation, activity recognition, unsupervised learning, change detection
  - Published work using CNNs, autoencoders, GANs, multi-stream, Siamese, triplets, inception networks, LSTMs, attention models
  - Used tensorflow, caffe, pytorch, theano, matconvnet
  - Serving as the Lead Associate Editor of special issues on deep learning for IEEE journals, Area Chair for deep learning papers, organizer of deep learning workshops

WORK EXPERIENCE:

2016 – Present **Huawei,** Santa Clara, CA, USA
Chief Scientist & Manager, Internet of Vehicles Lab & Noah's Ark Lab

- Leading all aspects of a product oriented special project (autonomous vehicles + deep learning)
- Directing multiple teams across two continents, recruiting team members, operating $4M budget
- Setting the vision, strategic direction and technical agenda of the lab
- Managing day-to-day operations including software development and code revision

2013 – Present **Australian National University (ANU),** Canberra, Australia
Professor (Full & Tenured), Research School of Engineering

- Won Australian Renewable Energy Grant on Robotic Visual Inspection of Solar Plants, **$3,081K**
- Won ARC Discovery Grant 2015, Semantic Vectorization, $374K
- Taught the Engineering Data Analytics course

2013 – 2016 **National ICT Australia, NICTA (**merged into CSIRO**),** Canberra, Australia
Group Leader, Computer Vision Research Group

- Led a group of **60+** researchers (principal, senior, adjunct) and research engineers
- Managed **$2.4M+$1.1M** annual operating budget, recruited researchers
- Directed all strategic, tactical, business and research program of the research group
- Helped the group to **triple** its scientific outcome, promoted an innovative and collaborative culture
- Transitioned the group to adapt to new challenges and organizational structure changes
- Promoted a rewarding, innovative, enthusiastic, open-minded and collaborative culture

2000 – 2013 **Mitsubishi Electric Research Laboratories,** Cambridge, MA, USA
Distinguished Member Research Staff, Imaging Group

- Technically managed several project oriented teams, hired people and allocated given resources
- Selected consistently among the **Best Performing** employees at MERL from 2003 to 2013
- Won the MELCO **Research Excellence Awards** in 2009 & 2011, the MELCO **Presidents Award** 2007, and the MERL **Directors Award** 2008 in recognition of contributions to strategic products
- Developed fundamental technologies for **key products:** Particle Beam IGRT, Surveillance DVR DX2500, MELCO Car Navigation, Satellite/SAR Imaging Suit, Electronic Toll Collection, Vehicle Traffic Control, Mitsubishi DTV Decoder, Physical Security PC55EXP, HD Helicopter Television, MPEG Decoder IC, MELCO Digital Signage
- Proposed and technically contributed to (partial list):
  - Multi-modal multi-sensor data enhancement (compressive sensing, fusion, super-resolution)
  - Object detection, classification & tracking for indoors/outdoors surveillance systems
  - Medical data analysis for particle beam IGRT systems
  - Stabilization/tracking for aerial cameras/radars, compression for car navigation devices
  - Camera sensor based traffic flow control & advanced electronic toll collection systems

1999 – 2000 **Hughes Research Laboratories,** Malibu, CA, USA
Information Sciences Lab

- Developed novel road extraction methods for very low-resolution multi-spectral satellite images as a key component of aerial surveillance products
- Designed an electron microscope data analyzer to determine nano-level properties of atomic structures to reduce the cost of special IC production

1997 – 1998 **AT&T Bell Labs,** Holmdel, NJ, USA
Image Processing Group

- Developed boundary accurate 3D estimation methods for experimental 3D display
- Prepared a comprehensive formulation of psychometric aspects of 3D perception to reduce eye-strain

TECHNICAL HIGHLIGHTS: *(not full list)*

- Forerunning **deep learning** research initiatives: invented the world-first deep learning based object tracker, developed the state-of-the-art deep learning based image ultra-resolution (64x~100x) solutions, developed numerous CNN, RNN, LSTM, and autoencoder, based object/action classification, domain transfer, metric learning, face recognition and visual question answering methods, co-organized the IEEE DeepVision Workshops at CVPR 2014, CVPR 2015, and CVPR 2016, serving as the co-editor of "Deep Learning for Video Surveillance" Special Issue of IEEE T-CSVT, serving as the Area Chair in deep learning at flagship conferences
- Invented novel **features & manifold learning** methods: relational combinatorial features that provide 70x speedup and 5x~20x less errors (award winning), region covariance matrix descriptor that is demonstrated as one of the best region features for segmentation, detection, and recognition (1000+ citations), boosted feature selection and classifier adaptation method that achieves the minimal memory imprint (3% of original) for low-cost on-camera systems
- Developed **classification & learning** methods, **video analytics**: the first manifold boosting classifiers that provide 10x performance improvement while running 30x faster than traditional SVMs: one of the most accurate (96% accuracy @10^{-5} FA) human detection methods (award winning), Fourier Frequency Mapping for fast SVM kernel approximation (50x acceleration, award winning), automatic parameter estimation & outlier detection methods using spectral clustering (key feature of video analytics products), analytical manifold learning methods (improve detection rate 90% for large affine transforms), "Value of Information" metrics that provide 4x more accurate active learning, online dictionary learning methods (for lightweight processing), kernel based weakly supervised clustering that improves accuracy from 60% to 99%, the fastest traffic congestion method using HMMs (robust to any lighting condition, achieves 95% accurate detection), dictionary learning based robust low-rank and subspace learning
- Developed state-of-the-science **computer vision** solutions: automatic video object segmentation (10x faster than motion segmentation, 'product quality' object trackers including multi-kernel mean-shift, regression, particle filtering (improve performance from 73% to 90%) for surveillance and medical applications, robust fast (100fps/single target) UAV aerial target tracking, multi-modal registration for optical, infrared, and medical imagery, the first dynamic programming based calibration method for multi-camera networks, essential tools to imaging products including filter banks, MPEG-7 metadata generation, level-set image segmentation, image reconstruction (4x super-resolution), the first statistical mixture of model fitting for effective removal of moving cast shadows (45% better detection)
- Developed advanced high dimensional **signal processing** algorithms: matrix decomposition based texture compression (5x improvement over JPEG), Bayesian update fitting of stochastic models to temporal data (2x more accurate than online EM when models overlap), high accuracy automatic target detection for very noisy (6dB) radar signals, frequency synthesis for MPEG-2 that minimizes the design complexity and drift (3dB improvement in HDTV streams), bandwidth renegotiation that minimizes latency 35% while optimizing bandwidth (a new feature of Mitsubishi QS Router)
- Developed sensor network based **cyber-physical systems** including real-time patient monitoring for IGRT system (with 2mm precision), motion sensor network that monitors living/working spaces to optimize task scheduling and event detection, critical care monitoring system using Dynamic Bayesian Networks and multi-modal bio-signal analysis for real-time human state prediction (remote health monitoring), autonomous driving system that detects objects for obstacle avoidance (car navigation)
- Designed **high performance computing** methods: one of the fastest bilateral filtering method that runs in constant time (runs at 200fps @ 1MB data on NVIDIA GPU using CUDA), highly cited (900+) integral histogram that accelerates search more than 100x, parallel processing algorithms that accelerate signal processing tasks up to 80x, efficient scan-line search using dynamic programming for distortion compensation from $O(M^4\ x^M)$ to $O(M^2)$ complexity that enables projecting video onto any dynamic surface, volumetric synthesis and rendering (CT to 4DCT / ultrasound / X-ray)

HONORS:

- **IEEE Fellow** for contributions to computer vision and video surveillance, Computer Society
- **R&D100 Award**, category: Scientist of the Year (select group of winners), 2006
- **Best Paper on Deep/Machine Learning**, APSIPA 2017
- **Best Student Paper Award,** IEEE ACCV 2016
- **Best Tracker Prize,** IEEE VOT Workshop, ECCV 2016
- **Best Poster Award,** IEEE AVSS 2014
- **Best Paper Award,** IEEE AVSS 2011
- **Best Paper Award**, IEEE OTCBVS Workshop, in conjunction with IEEE CVPR 2010
- **Best Paper Award – Runner up** (out of 1300 papers), IEEE **CVPR** 2007
- **Top Ranking High Value Innovation Award** in the IOV Lab (500+ people), 2017
- **Public Utility Systems Research Excellence Award** for excellent performance of developed technology for the system deciphering damages through the Helicopter TV images, 2009
- **MELCO-ATC Excellence Award** for contribution to planning and monitoring technologies for scanning particle beam therapy, 2009
- **Corporate R&D Award** for contributions to product competitiveness thorough innovative algorithm development for video surveillance systems, 2008
- **MERL Directors Award** for contributions to product development of medical image based alignment technology for particle beam radiotherapy, 2008
- **Most Popular Scientist Award** from Popular Science Magazine, TR, 2007
- **Best Paper Award – nomination** (out of 900 papers), IEEE ICME 2007
- **Best Paper Award – nomination** (out of 250 papers), IEEE AVSS 2009
- 5 and 10 years of **High Achievement Awards** by MERL 2005, 2010
- **Top 0.005%** in the National University Entrance Exam
- Ranked **32**nd among **700,000** students
- Full scholarship for overseas doctorate study from National High Educational Council (**Top 1%**)
- Full scholarship for 5 years from the Board of Education of Bilkent University (**Top 2.5%**)
- Honorable mention at the Regional Peace Poems Awards

EDUCATION:

2002 **Ph.D., Electrical & Computer Engineering**
New York University, NY
Minors: 1.Mathematics, 2.Computer Science
Thesis: Automatic Video Object Segmentation. Advisor: Prof Yao Wang (IEEE Fellow)

1996 **M.S. Electrical Engineering**
New York University, NY
Concentration: Signal Processing Motion Estimation. Advisor: Prof Yao Wang (IEEE Fellow)
University of Southern California, Los Angeles, CA. Enrolled in EE; transferred to NYU – Poly

1992 **B.S. Electrical Engineering**
Bilkent University, Ankara, TR. Advisor Prof Levent Onural (IEEE Fellow)

TALKS:

Magazine Interview: "Deep Learning", IEEE Spectrum Magazine, 2016
Lecture: "Data driven learning", Robotic Vision Summer School, 2016
Ask the Experts Panel, IEEE Spectrum Magazine, 2016
Lecture: "Image processing by dictionary Learning", Advanced Disciplines, Xidian University, 2015
Panel Talk: "Commercialization of computer vision", Charles Sturt University, 2015
Keynote: "Learning on manifolds for computer vision", CCCV, 2015
Lecture: "Sparse representations", Robotic Vision Summer School, 2015
Tutorial: "Riemannian Geometry in Computer Vision," ACCV, 2014
Panel Talk: "Commercialization of Computer Vision", IEEE Workshop LSVisCom (with ICCV), 2013
Invited Talk: "Dictionary learning", University of Colorado, Colorado Springs, 2013
Tutorial: "Differential Geometric Methods for Shape Analysis and Activity Recognition", CVPR, 2012
Invited Colloquium: "Computer vision manifolds", University of Minnesota, IMA, 2011
Invited Talk: "Learning in non-linear spaces", Brown University, 2011
Keynote: "Vision application of structural learning through manifolds", IAPR S+SSPR, 2010
Invited Talk: "Video analytics", Siemens, 2010
Invited Colloquium: "Inference on manifolds", Boston University, ECE, 2010
Invited Talk: "Is world made of manifolds?" The Ohio State University, 2009
Invited Talk: "Future of surveillance systems", IEEE AVSS, Genoa, 2009
Panel: "Surveillance technologies from a practical point of view", IEEE AVSS, 2009
Plenary: "Past and future of smart camera systems", IEEE DICTA, 2008
Invited Talk: "Manifold learning", MIT, 2008
Keynote: "Future generation detection and tracking systems", ISVC, 2007
Invited Talk: "Detection, classification and tracking in manifolds", Google, 2007
Panel: "Issues in video analytics: research vs. applications", IEEE AVSS, 2007
Invited Talk: "Covariance matrix descriptors", Boston University, CS Department, 2006
Invited Talk: "Object detection and tracking", University of Illinois-Chicago, 2006
Invited Talk: "Combining detection and tracking", Sarnoff, 2005
Invited Talk: "Advanced computer vision solutions for surveillance systems", Rutgers University, 2005
Invited Talk: "How to learn backgrounds in challenging environments", EPFL, 2004
Invited Talk: "Image processing tools for multi-camera systems", University of Maryland, 2003
Invited Talk: "Video object segmentation using video-cubes", Carnegie-Mellon, 2003

ACADEMIC ROLES:

Editor:

- **Associate Editor**, IEEE Signal Processing Magazine, 2011 to present (impact rate 6.0)
- **Associate Editor**, IEEE Transactions on Multimedia, 2017 to present
- **Associate Editor**, SIAM Imaging Sciences, 2011 to present (rank 2 / 236 in applied math)
- **Associate Editor**, Journal of Machine Vision Applications, Springer, 2006 to present
- **Associate Editor**, EURASIP Journal of Image & Video Processing, 2011 to present
- **Associate Editor**, Journal of Real-Time Image and Video Processing, Springer, 2004 to present

- **Guest Editor,** IEEE Signal Processing Magazine, Special Issue on Deep Learning for Visual Understanding, F. Porikli, S. Shan, C. Snoek, R. Sukthankar, X. Wang, 2017

- **Guest Editor,** IEEE Signal Processing Magazine, Special Issue on Image/Video Saliency Detection and Segmentation for Big Data, J. Han, J. Shen, D. Xu, L. Shao, F. Porikli, J.-N. Hwang, 2017
- **Guest Editor,** IEEE T-CSVT, Special Issue on Deep Learning for Video Surveillance, F. Porikli, L. Davis, Q. Wang, Y. Li, 2016
- **Guest Editor,** IEEE T-CSVT, Special Issue on Large Scale and Nonlinear Similarity Learning for Intelligent Video, W. Zuo, L. Lin, A. Yuille, H. Bischof, L. Zheng, F. Porikli, 2016
- **Guest Editor,** Pattern Recognition, Special Issue on Discriminative Feature Learning from Big Data for Visual Recognition, Z. Jiang. Z. Lin, H. Ling, F. Porikli, L. Shao, P. Turaga, 2015
- **Guest Editor**, Journal of Machine Vision Applications, Special Issue on Car Navigation, 2011
- **Guest Editor**, Journal of Machine Vision Applications, Special Issue on Dynamic Textures, 2009
- **Guest Editor,** EURASIP JIVP, Special Issue on Video Tracking in Complex Scenes, 2008

Conference Organization:

- **General Chair**, IEEE Conf. on Advanced Video & Signal Based Surveillance (AVSS), 2010
- **General Chair,** IEEE Winter Applications and Computer Vision Conference (WACV), 2014
- **Chair of Steering Committee**, IEEE Conf. on Advanced Video & Signal Based Surveillance (AVSS)
- **Technical Program Chair,** IEEE Winter Applications & Computer Vision Conference (WACV), 2015
- **Technical Program Chair,** IEEE Workshop on Applications in Computer Vision (WACV), 2013
- **Technical Program Chair,** IEEE Advanced Video & Signal Based Surveillance (AVSS), 2012
- **Area Chair,** IEEE Winter Applications and Computer Vision Conference (WACV), 2017
- **Area Chair,** IEEE Asian Conference on Computer Vision (ACCV), 2016
- **Area Chair,** IEEE International Conference on Image Processing (ICIP), 2016
- **Area Chair,** IAPR International Conference on Pattern Recognition (ICPR), 2016
- **Area Chair,** 29th Australasian Joint Conference on Artificial Intelligence (AI), 2016
- **Special Tracks Chair**, International Symposium on Visual Computing (ISVC), 2016
- **Area Chair,** IEEE International Conference on Computer Vision (ICCV), 2015
- **Area Chair,** 27th Australasian Joint Conference on Artificial Intelligence (AI), 2015
- **Area Chair,** IEEE Conf. on Advanced Video & Signal Based Surveillance (AVSS), 2015
- **Area Chair,** IEEE International Conference on Image Processing (ICIP), 2014
- **Track Chair**, IAPR International Conference on Pattern Recognition (ICPR), 2014
- **Area Chair,** IEEE Conf. on Advanced Video & Signal Based Surveillance (AVSS), 2013
- **Area Chair,** International Symposium on Visual Computing (ISVC), 2013
- **Area Chair,** IAPR International Conference on Image Analysis and Processing (ICIAP), 2013
- **Area Chair,** IEEE International Conference on Intelligent Transportation Systems (ITSC), 2013
- **Special Tracks Chair**, International Symposium on Visual Computing (ISVC), 2012
- **Track Chair**, IAPR International Conference on Pattern Recognition (ICPR), 2010
- **Special Tracks Chair**, International Symposium on Visual Computing (ISVC), 2009
- **Area Chair**, IEEE Conf. on Computer Vision & Pattern Recognition (CVPR), 2009
- **Track Chair**, IEEE International Conference on Multimedia & Expo (ICME) 2007, 2008
- **Special Tracks Chair**, International Symposium on Visual Computing (ISVC), 2007
- **Corporate Relations Chair,** IEEE Conf. on Computer Vision & Pattern Recognition (CVPR), 2015 (broke the previous record of corporate sponsorship funding with $250K)
- **Corporate Relations Chair,** IEEE Conf. on Computer Vision & Pattern Recognition (CVPR), 2013 (broke the previous record of corporate sponsorship funding with $120K)
- **Corporate Relations Chair,** IEEE Conf. on Computer Vision & Pattern Recognition (CVPR), 2012
- **Industrial Chair,** 12th Asian Conference on Computer Vision (ACCV), 2016
- **Industrial Chair,** European Conference on Computer Vision (ECCV), 2014
- **Industrial Chair,** IEEE International Conference on Computer Vision (ICCV), 2011
- **Program Chair**, SPIE Real-Time Imaging, 2003 to present
- **Program Chair**, Visual Communications & Image Processing, 2004

- **Advisory Board,** IAPR International Conference on Pattern Recognition (ICPR), 2010
- **USA Liaison,** IEEE Intelligent Vehicles Symposium (IV), 2009
- **Publicity Chair,** IAPR Asian Conference on Pattern Recognition (ACPR), 2013

Panelist Judge:

- **National Science Foundation, NSF,** Computer Vision, 2013
- **National Science Foundation, NSF,** Computer Vision, 2012
- **National Science Foundation, NSF,** Computer Vision, 2011
- **National Science Foundation, NSF,** Computer Vision, 2010
- **National Science Foundation, NSF,** Image Processing, 2008

Organizing Chair:

- IEEE Workshop on Deep Vision (with IEEE CVPR 2016)
- IEEE Workshop on Deep Vision (with IEEE CVPR 2015)
- IEEE Workshop on Deep Vision (with IEEE CVPR 2014)
- IEEE Workshop on Change Detection (with IEEE CVPR 2014)
- Workshop on My Car Has Eyes - Intelligent Vehicles with Vision Technology, (with ACCV 2014)
- 2nd International Workshop on Big Data in 3D Computer Vision (with ACCV 2014)
- IEEE Workshop on Visual Object Tracking - VOT (with IEEE ICCV 2013)
- IEEE Workshop on Big Data in 3D Computer Vision (with IEEE ICCV 2013)
- 9th IEEE Workshop on Perception Beyond the Visible Spectrum (with IEEE CVPR 2013)
- Special Session on Information Fusion for Fixed & Mobile Surveillance Applications (with IF 2013)
- Mini Symposium on Novel Approaches for Vision Applications (with SIAM 2013)
- IEEE Change Detection Workshop (with IEEE CVPR 2012)
- ICPR Contest on People Tracking in Wide Baseline Camera Networks (with ICPR 2012)
- IEEE Workshop on Modeling, Simulation and Visual Analysis of Large Crowds (with IEEE CVPR 2011)
- IEEE Online Learning for Computer Vision Workshop (with IEEE CVPR 2010)
- IEEE Online Learning for Computer Vision Workshop (with IEEE ICCV 2009)
- IEEE Online Learning for Classification Workshop (with IEEE CVPR 2008)
- IEEE Online Learning for Classification Workshop (with IEEE CVPR 2007)
- Special Session on Understanding of Dynamics in Complex and Cluttered Scenes (with ISVC 2007)

Program Committee:

Conferences:

- IEEE Conf. on Computer Vision and Pattern Recognition (CVPR) 2005~2016
- IEEE International Conference on Computer Vision (ICCV) 2005, 2007, 2009, 2011, 2013, 2015
- European Conference on Computer Vision (ECCV) 2006, 2008, 2010, 2012, 2014
- IEEE Fusion, 2014
- International Conference on Pattern Recognition (ICPR), 2008, 2012
- International Symposium of Visual Computing (ISVC) 2005~2012, 2014
- International Conference on Image Analysis and Processing (ICIAP), 2012
- IEEE Conference on Advanced Video and Signal based Surveillance (AVSS) 2005~2009
- IEEE International Conference on Image Processing (ICIP) 2004, 2006~2008
- IEEE Conference on Intelligent Transportation Systems (ITS) 2006, 2007, 2008
- IEEE Intelligent Vehicles Symposium (IVS) 2004

Workshops:

- IEEE Large Scale 3D Point Cloud Workshop (with IEEE CVPR 2016)
- 2nd workshop on Diff-CVML (with IEEE CVPR 2016)

- International Workshop on Differential Geometry in Computer Vision for Analysis of Shapes, Images and Trajectories (DIFF-CV) 2015
- Workshop on Robust Subspace Learning and Computer Vision (with ICCV 2015)
- Workshop on Scene Background Modeling and Initialization (SBMI) 2015
- IEEE Workshop on Long Term Detection and Tracking (LTDT) 2014
- Workshop on Video Event Categorization, Tagging and Retrieval towards Big Data (VECaTR), 2014
- Workshop on Computer Vision for Affective Computing (CV4AC) 2014
- IEEE Workshop on Performance Evaluation of Tracking Sys. (PETS) 2005~2008, 2012~2013
- 4th International Workshop on Socially Intelligent Surveillance and Monitoring (SISM) 2013
- IEEE Workshop on Object Tracking & Class. Beyond Visible Spectrum (OTCBVS) 2006~2010
- IEEE Workshop on Applications of Computer Vision (WACV) 2006, 2008~2010
- Visual Communications and Image Processing (VCIP) 2004, 2006, 2008, 2010
- IEEE Digital Image Computing: Techniques and Applications (DICTA) 2010
- IEEE Workshop on Video-Oriented Object and Event Classification (VOOEC) 2009
- International Workshop on Online Pattern Recognition and Machine Learning Techniques for Computer Vision Applications (OPRMLT) 2008
- IEEE Workshop on Motion and Video Computing (WMVC) 2008
- IEEE International Workshop on Mobile Multimedia Processing (WMMP) 2008
- IEEE Workshop on Multi-Camera and Multi-modal Sensor Fusion, (MCMMSF) 2008
- IEEE International Workshop on Multimedia Signal Processing (WMSP) 2008
- IS&T Image and Video Communications and Processing (IVCP) 2003, 2005

Session Chair (not updated after 2008):

- IEEE Intl. Conference on Advanced Video & Signal Based Surveillance (AVSS) 2006, Tracking Session
- IEEE International Conference on Image Processing (ICIP) 2006, Object Detection
- SPIE Real Time Imaging 2004-2008 Video Compression & Image Analysis Sessions
- IAPR Machine Vision Applications (MVA) 2005, Intelligent Transport Systems Session
- International Symposium of Visual Computing (ISVC) 2005, Autonomous Navigation
- IS&T Image & Video Communications Processing 2003, 2005, Video Scaling - Tracking
- IEEE International Conference on Image Processing (ICIP) 2003, Surveillance Video
- IEEE International Conference on Multimedia & Expo (ICME) 2002, 2003, 2005, Multimedia Analysis & Multi-Camera Systems Sessions

Journal Reviewer (not updated after 2013):

- IEEE Transactions on Pattern Analysis & Machine Intelligence, 2003~2013
- International Journal on Computer Vision (IJCV), 2012-2013
- IEEE Computer Society Pattern Recognition Letters, 2005~ 2008, 2010
- IEEE Transactions on Image Processing 2003~ 2010, 2012
- IEEE Transactions on Circuits & Systems for Video Tech., 1997~1998, 2002~2003, 2006~2010
- ACM Multimedia 2002, 2004, 2006, 2013, ACM Computer Applications in Health Care, 2003~2007

PUBLICATIONS:

- **Book**, Handbook on Background Modeling and Foreground Detection for Video Surveillance, T. Bouwmans, F. Porikli, B. Hörferlin, A. Vacavant, CRC Press, Taylor and Francis Group, 2014
- **Book**, Video Analytics for Business Intelligence, Springer, C. Shan, F. Porikli, T. Xiang, S. Gong, 2012

1. W. Wang, J. Shen, R. Yang, F. Porikli, “Saliency-aware video object segmentation, IEEE Transaction on Pattern Analysis and Machine Intelligence (PAMI), January 2018 **(Journal)**
2. H. Zhu, F. Porikli, “Automatic refinement strategies for manual initialization of object trackers”, IEEE Transaction on Image Processing (TIP), 2017 **(journal)**
3. W. Wang, J. Shen, R. Yang, F. Porikli, “A unified spatiotemporal prior based on geodesic distance for video object segmentation”, IEEE Transaction on Pattern Analysis and Machine Intelligence (PAMI), 2017 **(journal)**
4. M. Faraki, M. Harandi, F. Porikli, “Large scale metric learning: A voyage from shallow to deep”, IEEE Transactions on Neural Networks and Learning Systems (T-NNLS), 2017 **(journal)**
5. S. H. Khan, X. He, F. Porikli, M. Bennamoun, “Forest change detection in incomplete satellite images with deep neural networks”, IEEE Transaction on Geoscience and Remote Sensing (TGRS), 2017 **(journal)**
6. S. Anwar, F. Porikli, C. Huyhn, “Category-specific object image denoising”, IEEE Transaction on Image Processing (TIP), 2017 **(journal)**
7. J. Shen, J. Peng, X. Dong, L. Shao, F. Porikli, “Higher-order energies for image segmentation”, IEEE Transaction on Image Processing (TIP), 2017 **(journal)**
8. W. Wang, J. Shen, F. Porikli, “Selective video object cutout”, IEEE Transaction on Image Processing (TIP), vol 26, No. 12, 2017 **(journal)**
9. G. Zhang, H. Sun, F. Porikli, Y. Liu, Q. Sun, “Optimal couple projections for domain adaptive sparse representation-based classification”, IEEE Transaction on Image Processing (TIP), vol 26, No. 12, 2017 **(journal)**
10. L. Huang, B. Ma, J. Shen, H. He, L. Shao, F. Porikli, “Visual tracking by sampling in part space”, IEEE Transaction on Image Processing (TIP), vol 26, No. 12, 2017 **(journal)**
11. S. Herath, M. Harandi, F. Porikli, “Going deeper into action recognition: A survey”, Journal Image and Vision Computing (IVC), vol 60, pages 4-21, 2017 **(journal)**
12. M. Faraki, M. Harandi, F. Porikli, “No fuss metric learning, a Hilbert space scenario”, Elsevier Pattern Recognition Letters (PRL), 2017 **(journal)**
13. X. Yu, F. Porikli, “Face hallucination with tiny unaligned images by transformative discriminative neural networks”, Thirty-First AAAI Conference on Artificial Intelligence (AAAI), 2017
14. P. Koniusz, Y. Tas, F. Porikli, “Domain adaptation by mixture of alignments of second- or higher-order scatter tensors”, IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2017
15. L. Pan, Y. Dai, M. Liu, F. Porikli, “Simultaneous stereo video deblurring and scene flow estimation”, IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2017
16. N. Akhtar, A. Mian, F. Porikli, “Joint discriminative Bayesian dictionary and classifier learning”, IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2017
17. X. Yu, F. Porikli, “Hallucinating very low-resolution unaligned and noisy face images by transformative discriminative autoencoders”, IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2017
18. S. Herath, M. Harandi, F. Porikli, “Learning an invariant Hilbert space for domain adaptation”, IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2017
19. S. Khan, M. Hayat, F. Porikli, “Scene categorization with spectral features”, IEEE International Conference on Computer Vision (ICCV), 2017
20. W. Wang, J. Shen, J. Xie, F. Porikli, “Super-trajectory for video segmentation”, IEEE International Conference on Computer Vision (ICCV), 2017
21. J. Zhang, Y. Dai, F. Porikli, “Deep salient object detection by integrating multi-level cues”, IEEE Winter Applications and Computer Vision Conference (WACV), 2017
22. J. Wang A. Cherian, F. Porikli, “Ordered pooling of optical flow sequences for action recognition”, IEEE Winter Applications and Computer Vision Conference (WACV), 2017
23. H. Zhang, X. He, F. Porikli, “Learning spatial transforms for refining object segment proposals”, IEEE Winter Applications and Computer Vision Conference (WACV), 2017

24. S. Khan, X. He, F. Porikli, M. Bennamoun, F. Sohel, R. Togneri, “Learning deep structured network for weakly supervised change detection”, International Joint Conference on Artificial Intelligence (IJCAI), 2017
25. S. Anwar, Z. Hayder, F. Porikli, “Depth estimation and blur removal from a single out-of-focus image”, British Machine Vision Conference (BMVC), 2017
26. S. Anwar, C. Huynh, F. Porikli, “Combined internal and external category-specific image denoising”, British Machine Vision Conference (BMVC), 2017
27. F. Shiri, X. Yu, P. Koniusz, F. Porikli, “Face destylization”, The International Conference on Digital Image Computing: Techniques and Applications (DICTA), 2017
28. X. Wang, H. Li, Y. Li, F. Shen, F. Porikli, “Robust and realtime deep tracking via multi-scale domain adaptation”, IEEE International Conference on Multimedia and Expo (ICME), 2017
29. M. Zhao, J. Zhang, F. Porikli, C. Zhang, W. Zhang, “Learning a perspective embedded deconvolutional network for crowd counting”, IEEE International Conference on Multimedia & Expo (ICME), 2017
30. X. Wang, H. Li, Y. Li, F. Porikli, M. Wang, “Deep tracking with objectness”, IEEE International Conference on Image Processing (ICIP), 2017
31. J. Zhang, B. Li, Y. Dai, F. Porikli, M. He, “Integrated deep and shallow networks for salient object detection”, IEEE International Conference on Image Processing (ICIP), 2017
32. J. Zhang, Y. Dai, F. Porikli, M. He, “Multi scale salient object detection with pyramid spatial pooling”, IEEE APSIPA ASC, 2017 **(Best Deep Learning Paper Award)**
33. F. Porikli, “Regression on Lie groups and its application to affine motion tracking”, Advances in Computer Vision and Pattern Recognition - Riemannian Geometry in Machine Learning, Statistics, Optimization, and Computer Vision, Editors: Minh, Vittorio, Springer, 2016 **(book chapter)**
34. M. Kristan, R. Pflugfelder, J. Matas, A. Leonardis, F. Porikli, G. Nebehay, G. Fernandez and T. Vojir, L. Cehovin, “A novel performance evaluation methodology for single-target trackers”, IEEE Transaction on Pattern Recognition and Machine Intelligence (PAMI), January, 2016 **(journal)**
35. H. Li, Y. Li, F. Porikli, “Convolutional neural net bagging for online visual tracking”, Elsevier Journal on Computer Vision and Image Understanding (CVIU), 2016 **(journal)**
36. H. Li, Y. Li, F. Porikli, “DeepTrack: Learning discriminative feature representations online for robust visual tracking”, IEEE Transactions on Image Processing (TIP), 2016 **(journal)**
37. B. Ma, L. Huang, J. Shen, L. Shao, M-H. Yang, and F. Porikli, “Visual tracking under motion blur”, IEEE Transactions on Image Processing (TIP), 5(12):5867-5876, 2016 **(Journal)**
38. J. Shen, W. Wang, L. Shao, F. Porikli, “Saliency transfer: A correspondence based approach for saliency detection”, IEEE Transactions on Image Processing (TIP), 2016 **(journal)**
39. G. Zhu, F. Porikli, H. Li, “Not all negatives are equal: Learning to track with multiple background clusters”, IEEE Transactions on Circuits, Systems, and Video Technology (T-CSVT), 2016 **(journal)**
40. Q. Hu, S. Paisitkriangkrai, C. Shen, A. van den Hengel, F. Porikli. “Fast detection of multiple objects in traffic scenes with a common detection framework”, IEEE Transactions on Intelligent Transportation Systems (T-ITS), 2016 **(journal)**
41. D. Liu, S. Wang, F. Porikli, “Spatial encoding of visual words for image classification”, SPIE Journal of Electronic Imaging, 2016 **(journal)**
42. G. Zhu, F. Porikli, H. Li, “Beyond local search: tracking objects everywhere with instance-specific proposals”, IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2016
43. M. Harandi, M. Salzmann, F. Porikli, “When VLAD met Hilbert”, IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2016
44. X. Yu, F. Porikli, “Ultra resolving face images by discriminative generative networks”, European Conference on Computer Vision (ECCV), 2016
45. P. Koniusz, A. Cherian, F. Porikli, “Tensor representations via kernel linearization for action recognition from 3D skeletons”, European Conference on Computer Vision (ECCV), 2016
46. H. Zhou, J. Alverez, F. Porikli, “Less is more: Towards compact CNNs”, European Conference on Computer Vision (ECCV), 2016

47. T. Zhang, F. Porikli, “Sparse coding on cascaded residuals”, Asian Conference on Computer Vision (ACCV), 2016 **(Best Student Paper)**
48. H. Zhang, X. He, F. Porikli, “Learning to generate object proposals with multi-modal cues”, Asian Conference on Computer Vision (ACCV), 2016
49. Y. Xie, F. Porikli, X. He, “Object-aware dictionary learning with deep features”, Asian Conference on Computer Vision (ACCV), 2016
50. G. Zhou, F. Porikli, H. Li, “Model-free multiple object tracking with shared proposals”, Asian Conference on Computer Vision (ACCV), 2016
51. M. Faraki, M. Harandi, F. Porikli, “Image set classification by symmetric positive semi-definite matrices”, IEEE Winter Applications and Computer Vision Conference (WACV), 2016
52. S. Wang, E. Zhu, J. Yin, F. Porikli, “Anomaly detection in crowded scenes by SL-HOF descriptor and foreground classification”, International Conference on Pattern Recognition (ICPR), 2016
53. A. Mukhopadhyay, S. Bhandarkar, F. Porikli, “Detection and characterization of intrinsic symmetry of 3D shapes”, International Conference on Pattern Recognition (ICPR), 2016
54. Y. Wang, Y. Li, F. Porikli, “Fine-tuning convolutional neural networks for visual aesthetics”, International Conference on Pattern Recognition (ICPR), 2016
55. G. Zhu, F. Porikli, H. Li, “Robust visual tracking with deep convolutional neural network based object proposals on PETS”, IEEE Workshop on Performance Evaluation of Tracking Systems (PETS) in conjunction with CVPR, 2016
56. H. Zhang, X. He, F. Porikli, L. Kneip, “Semantic context and depth-aware object proposal generation”, IEEE International Conference on Image Processing (ICIP), 2016
57. K. Kurihara, Y. Toyoda, S. Moriya, D. Suzuki, T. Fujita, N. Matoba, J. Thornton, F. Porikli, “Light-weight single image super-resolution via pattern-wise regression function”, Image Processing: Algorithms and Systems XIV, Electronic Imaging, 2016
58. M. Felsberg, A. Berg, G. Hager,..., F. Porikli,… “The thermal infrared visual object tracking VOT-TIR2015 results, IEEE Workshop on Video Object Tracking in conjunction with ICCV, 2015
59. M. Kristian, J. Matas, A. Leonardis,..., F. Porikli,… “The visual object tracking VOT2015 challenge Results”, IEEE Workshop on Video Object Tracking, in conjunction with CVPR, 2015
60. S. Anwar, C.P. Huynh, F. Porikli, “Class-specific image deblurring”, IEEE International Conference on Computer Vision (ICCV), December, 2015
61. B. Ma, H. Hu, J. Shen, Y. Zhang, F. Porikli, “Linearization to nonlinear learning for visual tracking”, IEEE International Conference on Computer Vision (ICCV), December, 2015
62. M. Faraki, M. Harandi, F. Porikli, “More about VLAD: A leap from Euclidean to Riemannian manifolds”, IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2015
63. S. Shen, W. Wang, F. Porikli, “Saliency-aware geodesic video object segmentation”, IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2015
64. X. Shu, F. Porikli, N. Ahuja, “Robust orthonormal subspace learning (ROSL)”, Handbook on Robust Low-Rank and Sparse Matrix Decomposition: Applications in Image and Video Processing, Editors: T. Bouwmans, N. Aybat, E. Zahzah, CRC Press, Taylor and Francis Group, 2015 **(book chapter)**
65. W. Wang, J. Shen, X. Li, F. Porikli, “Robust video object cosegmentation” IEEE Transactions on Image Processing (TIP), volume: 24, issue: 10, 2015 **(journal)**
66. F. Li, F. Porikli, “Enforcing point-wise priors on binary segmentation”, British Machine Vision Conference (BMVC), 2015
67. M. Faraki, M. Harandi, F. Porikli, “Approximate infinite-dimensional region covariance descriptors for image classification”, IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP), 2015
68. M. Faraki, M. Harandi, F. Porikli, “Material classification on symmetric positive definite manifolds”, IEEE Winter Applications and Computer Vision Conference (WACV), 2015
69. G. Zhu, F. Porikli, Y. Ming, H. Li, “Lie-Struck: affine tracking on Lie groups using structured SVM”, IEEE Winter Applications and Computer Vision Conference (WACV), 2015
70. F. Porikli, O. Tuzel, P. Meer, “Designing a boosted classifier on Riemannian manifolds”, Riemannian Computing in Computer Vision, Editors: Turaga, Srivastava, Springer, 2015 **(book chapter)**

71. S. Mustapha, C. P. Huynh, P. Runcie, F. Porikli, “Paint condition assessment of civil structures using hyper-spectral imaging”, International Conference on Structural Health Monitoring of Intelligent Infrastructure, 2015
72. C. P. Huynh, S. Mustapha, P. Runcie, F. Porikli, “Multi-class support vector machine for paint condition assessment on the Sydney Harbour Bridge using hyperspectral imaging”, International Journal on Structural Monitoring and Maintenance, Special Issue From Data to Decision Making, 2015 **(journal)**
73. I. S. Topkaya, H. Erdogan, F. Porikli, “Tracklet clustering for robust multiple object tracking using distance dependent Chinese restaurant processes”, Springer Journal on Signal, Image and Video Processing, 2015 **(journal)**
74. Y. Chi, F. Porikli, “Classification and boosting with multiple collaborative representations”, IEEE Transaction on Pattern Recognition and Machine Intelligence (PAMI), August 2014 **(journal)**
75. L. Tao, F. Porikli, R. Vidal, “Sparse dictionaries for semantic segmentation”, European Conference on Computer Vision (ECCV), 2014
76. H. Li, Y. Li, F. Porikli, “DeepTrack Single: robust online visual tracking with an single convolutional neural network”, Asian Conference on Computer Vision (ACCV), 2014
77. H. Li, Y. Li, F. Porikli, “DeepTrack: learning discriminative feature representations by convolutional neural networks for visual tracking”, British Machine Vision Conference (BMVC), 2014
78. F. Li, F. Porikli, “Biomechanical model-based 4DCT simulation”, Journal on Computer Methods in Biomechanics and Biomedical Engineering: Imaging & Visualization, 2014 **(journal)**
79. A. Singh, F. Porikli, N. Ahuja, “Super-Resolving Noisy Images”, IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2014
80. X. Shu, F. Porikli, N. Ahuja, “Robust orthonormal subspace learning: efficient recovery of corrupted low-rank matrices”, IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2014
81. H. Harandi, M. Salzmann, F. Porikli, “Bregman divergences for infinite dimensional covariance matrices”, IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2014
82. A. Soni, J. Haupt, F. Porikli, “Recycled linear classifiers for multiclass classification”, IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP), 2014
83. J. Ni, T, Marks, O. Tuzel, F. Porikli, “Detecting 3D geometric boundaries of indoor scenes under varying lighting”, IEEE Winter Applications and Computer Vision Conference (WACV), 2014
84. I. S. Topkaya, H. Erdogan, F. Porikli, “Counting people by clustering person detector outputs”, IEEE Advanced Video and Signal-Based Surveillance (AVSS), 2014 **(Best Poster Award**)
85. M. Kristan, R. Pflugfelder, A. Leonardis, J. Matas, F. Porikli, L. Cehovin, G. Nebehay, G. Fernandez and T. Vojir, “VOT2014 challenge: overview and additional results”, Computer Vision Winter Workshop, 2014
86. M. Kristan, R. Pflugfelder, A. Leonardis, J. Matas, F. Porikli, L. Cehovin, G. Nebehay, G. Fernandez, T. Vojir, “The visual object tracking challenge results”, IEEE Workshop on VOT, 2013
87. H. Van Nguyen, F. Porikli, “Support vector shape: A classifier based shape representation”, IEEE Transaction on Pattern Recognition and Machine Intelligence (PAMI), March 2013 **(journal)**
88. F. Li, F. Porikli, “Tracking lung tumors in orthogonal X-rays”, Journal on Computational and Mathematical Methods in Medicine (CMMM), Issue on Biomedical Signal and Image Processing for Clinical Decision Support Systems, 2013 **(journal)**
89. F. Porikli, F. Bremond, S. Dockstader, A. Hoogs, J. Ferryman, B. Lovell, S. Pankanti, B. Rinner, P. Tu, P. Venetianer, “Video surveillance: Past, Present and the Future”, IEEE Signal Processing Magazine (SPM), May 2013 (impact factor 9.0) **(journal)**
90. F. Porikli, A. Soni, K. Suwa, “Nonstationary Noise Removal”, Asia-Pacific Conference on Synthetic Aperture Radar (APSAR), Tsukuba, 2013
91. F. Li, F. Porikli, “Harmonic variance: A novel feature for defocus segmentation”, British Machine Vision Conference (BMVC), 2013
92. M. Kocamaz, F. Porikli, “Unconstrained 1D range and 2D image based human detection”, IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), 2013
93. F. Li, F. Porikli, “Biomechanical simulation of lung deformation from one CT scan”, MICCAI Workshop on Bio-Imaging and Visualization for Patient-Customized Simulations”, Nagoya, 2013

94. F. Porikli, A. Yilmaz, “Object detection and tracking”, Book chapter, Video Analytics for Business Intelligence, Springer, 2012 **(book chapter)**
95. Z. Lian, A.Godil, B. Bustos, M. Daoudi, J. Hermans, S.Kawamura, Y.Kurita, G. Lavoué, H. Nguyen, R Ohbuchi, Y. Ohkita, Y. Ohishi, F. Porikli, M. Reuter, I. Sipiran, D. Smeets, P.Suetens, H. Tabia, D. Vandermeulen, “A comparison of methods for non-rigid 3D shape retrieval”, Pattern Recognition (PR) 46(1): 449-461, 2013 **(journal)**
96. Y. Chi, F. Porikli, “Connecting the dots in multiclass classification: from nearest subspace to collaborative representation”, IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2012
97. N. Goyette, P. Jodoin, F. Porikli, J. Konrad, P. Ishwar, “changedetection.net: A new change detection benchmark dataset”, IEEE Change Detection Workshop, in conjunction with IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2012
98. A. Joshi, F. Porikli, N. Papanikolopulos, “Scalable active learning for multi-class image classification”, IEEE Transaction on Pattern Recognition and Machine Intelligence (PAMI), 2012 **(journal)**
99. A. Ruta, F. Porikli, “Compressive clustering of high-dimensional data”, 11th IEEE International Conference on Machine Learning Applications (ICMLA), 2012
100. F. Porikli, R. Sundaresan, K. Suwa, “SAR despeckling by sparse reconstruction on affinity nets”, 9th European Conference on Synthetic Aperture Radar (EUSAR), 2012
101. Y. Wang, F. Porikli, “Multiple dictionary learning for blocking artifact reduction”, IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP), 2012
102. N. Rao, F. Porikli, “A clustering approach to optimize online dictionary learning”, IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP), 2012
103. R. Sundaresan, F. Porikli, “Additive noise removal by sparse reconstruction on affinity nets”, IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP), 2012
104. A. Joshi, F. Porikli, N. Papanikolopoulos, “Coverage optimized active learning for k-NN classifiers”, IEEE International Conference on Robotics and Automation (ICRA), 2012
105. F. Porikli, A. Bovik, C. Plack, G. AlRegib, J. Farrell, P. Le Callet, Q. Huynh-Thu, S. Möller, and S. Winkler, “Multimedia quality assessment”, IEEE Signal Processing Magazine (SPM), 2011 (impact factor 9.0) **(journal)**
106. H. Van Nguyen, F. Porikli, Concentric ring signature descriptor for 2.5/3D objects”, IEEE International Conference on Image Processing (ICIP), 2011
107. F. Porikli, H. Ozkan, “Data driven frequency mapping for computationally scalable object detection”, IEEE Advanced Video and Signal based Surveillance (AVSS), 2011 **(Best Paper Award)**
108. M. Hussein, F. Porikli, S. Aslan, R. Li, “CrossTrack: robust 3D tracking from two cross-sectional views”, IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2011
109. Z. Lian, A. Godil, B. Bustos, M. Daoudi, J. Hermans, S. Kawamura, Y. Kurita, G. Lavou, H. Nguyen, R. Ohbuchi, Y. Ohkita, Y. Ohishi, F. Porikli, M. Reuter, I. Sipiran, D. Smeets, P. Suetens, H. Tabia, and D. Vandermeulen, “Shape retrieval on non-rigid 3D watertight meshes”, Eurographics, Shape Retrieval Contest (SHREC), 2011
110. A. Joshi, F. Porikli, “Scene adaptive human detection with incremental active learning”, IAPR International Conference on Pattern Recognition (ICPR), 2010
111. X. Li, F. Porikli, “Human state classification and predication for critical care monitoring by real-time biosignal analysis”, IAPR International Conference on Pattern Recognition (ICPR), 2010
112. F. Porikli, “Neddle Picking: A sampling based track before detection method for small targets”, SPIE Defense & Security, 2010
113. A. Joshi, F. Porikli, and N. Papanikolopoulos, “Breaking the interactive bottleneck in multi-class classification with active selection and binary feedback”, IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2010
114. V. Venkataraman, F. Porikli, “RelCom: relational combinatics features for rapid object detection”, IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2010, IEEE OTBVS Workshop **(Best Paper Award)**

115. A. Joshi, F. Porikli, and N. Papanikolopoulos, “Multi-class batch-mode active learning for image classification”, IEEE International Conference on Robotics and Automation (ICRA), 2010
116. T. Lee, F. Porikli, A. Chaudhuri, H. Chen, CycleStack: inferring periodic behavior via temporal sequence visualization in ultrasound video”, IEEE Pacific Visualization Conference (PacVis), 2010
117. F. Porikli, “Learning on manifolds”, IAPR Joint Workshop on Structural and Statistical Pattern Recognition, 2010 (invited paper)
118. F. Porikli, F. Bashir, H. Sun, “Compressed domain video object segmentation”, IEEE Transactions on Circuits, System in Video Technology (T-CSVT), 2010 **(journal)**
119. M. Hussein, F. Porikli, L. Davis, “A comprehensive evaluation framework and a comparative study for human detectors”, IEEE Transaction on Intelligent Transportation Systems (T-ITS), 2009 **(journal)**
120. A. Joshi, F. Porikli, and N. Papanikolopoulos, “Multi-class active learning with binary user feedback, “Advances in Neural Information Processing Systems (NIPS), Workshop on Analysis and Design of Algorithms for Interactive Machine Learning (ADA-IML), 2009.
121. O. Tuzel, F. Porikli, P. Meer, "Kernel methods for weakly supervised mean-shift clustering", IEEE International Conference on Computer Vision (ICCV), 2009
122. A. Joshi, F. Porikli, and N. Papanikolopoulos, “Multi-class active learning for image classification”, IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2009
123. F. Porikli, P. Pan, “Regressed importance sampling on manifolds for efficient object tracking”, IEEE Advanced Video and Signal based Surveillance (AVSS), 2009 **(nomination Best Paper Award)**
124. P. Pan, F. Porikli, D. Schonfeld, “Recurrent tracking using multifold consistency”, IEEE Conference on Computer Vision Pattern Recognition (CVPR), IEEE PETS Workshop, 2009
125. P. Pan, F. Porikli, D. Schonfeld, “A new method for tracking performance evaluation based on a reflective model and perturbation analysis, IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP), 2009
126. K. Sengupta, F. Porikli, “Geometric sequence imaging with Bayesian smoothing for optical and capacitive imaging sensors”, IEEE OTBVS Workshop in conjunction with CVPR, 2009
127. M. Hussein, F. Porikli, L. Davis, “Object detection via boosted deformable features”, IEEE International Conference on Image Processing (ICIP), 2009
128. C. Regazzoni, A. Cavallaro, F. Porikli, “Video tracking in complex scenes for surveillance applications”, Editorial, EUSARIP Journal on Image and Video Processing, 2009 **(journal)**
129. A. Ruta, F. Porikli, Y. Li, S. Watanabe, “In-vehicle camera traffic sign detection and recognition” Springer Journal on Machine Vision Applications, 2009 **(journal)**
130. A. Ruta, F. Porikli, Y. Li, S. Watanabe, H. Kage, K. Sumi, “A new approach for in-vehicle camera Traffic sign detection and recognition”, IAPR Conference on Machine Vision Application, 2009
131. F. Porikli, “Constant Time O(1) Bilateral Filtering”, IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2008
132. O. Tuzel, F. Porikli, P. Meer, "Regression based class-specific tracking for fast object detectors", IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2008
133. T. Parag, F. Porikli, A. Elgammal, "Adaptive linear weak classifiers for online boosting", IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2008
134. M. Hussein, F. Porikli, L. Davis, “Kernel integral spaces”, IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2008
135. P. Pan, F. Porikli, D. Schonfeld, “A new method for tracking performance evaluation based on a reflective model and perturbation analysis”, IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP), Taiwan, 2009
136. O. Tuzel, F. Porikli, P. Meer, “Human detection via classification on Riemannian manifolds”, IEEE Transactions on Pattern Analysis and Machine Intelligence (PAMI), 2008 **(journal)**
137. Z. Yin, F. Porikli, R. Collins, “Likelihood map fusion for visual object tracking”, IEEE Workshop on Application of Computer Vision (WACV), Colorado, 2008
138. X. Mei, F. Porikli, “Joint tracking and video registration by factorial Hidden Markov Models”, IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP), 2008

139. F. Porikli, O. Tuzel, “Learning on Lie groups for invariant detection via tracking”, International Workshop On Object Recognition, Lake Como, 2008 (Invited)
140. O. Tuzel, F. Porikli, P. Meer, “Human detection via classification on Riemannian manifolds”, IEEE Conference on Computer Vision and Pattern Recognition (CVPR) 2007 **(Best Paper Runner Up)**
141. F. Porikli, Z. Yin, “Temporally static region detection in multi-camera systems”, IEEE International Conference on Computer Vision (ICCV), PETS Workshop, 2007
142. F. Porikli, “Detection of temporarily static regions by processing video at different frame rates”, IEEE Advanced Video and Signal based Surveillance (AVSS), 2007
143. F. Bashir, F. Porikli, “Collaborative tracking of objects in EPTZ cameras”, Video Coding and Image Processing (VCIP), 2007
144. F. Porikli, T. Kocak, “Fast distance transform computation using dual scan line propagation”, SPIE, Real-Time Imaging Conference, 2007
145. X. Mei, K. Zhou, F. Porikli, “Probabilistic visual tracking via robust template matching & incremental subspace update”, IEEE International Conference on Multimedia and Expo (ICME), 2007 **(nomination Best Paper Award)**
146. F. Porikli, Y. Ivanov, T. Haga, “Robust abandoned object detection using dual foregrounds”, EURASIP Journal on Advances in Signal Processing, Special Issue, 2007 **(journal)**
147. J. Shao, F. Porikli, R. Chellappa, “Estimation of contour motion and deformation for non-rigid object tracking”, Journal of Optical Society of America, vol. 24, pp. 2109-2121, 2007 **(journal)**
148. X. Mei, S. K. Zhou, H. Wu, F. Porikli, “Integrated detection, tracking and recognition for IR video-based vehicle classification”, Pattern Recognition Letters, Elsevier, 2007 **(journal)**
149. F. Porikli, “Achieving real-time object detection and tracking under extreme conditions”, Journal of Real-Time Image Processing, Springer, 2006 **(journal)**
150. F. Porikli, O. Tuzel, P. Meer, “Covariance tracking using model update based on Lie algebra”, IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2006
151. O. Tuzel, F. Porikli, P. Meer, “Region covariance: a fast descriptor for detection and classification”, European Conference on Computer Vision (ECCV), 2006
152. E. Goubet, J. Katz, F. Porikli, “ Pedestrian tracking using thermal infrared imaging”, SPIE Defense & Security, 2006
153. F. Porikli, O. Tuzel, “Covariance tracker”, Video Proceedings, IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2006
154. F. Porikli, F. Bashir, “A complete performance evaluation platform including matrix-based measures for joint object detector and tracker systems”, IEEE Conference on Computer Vision and Pattern Recognition (CVPR), IEEE PETS Workshop, 2006
155. F. Porikli, O. Tuzel, “Fast construction of covariance matrices for arbitrary size image windows”, IEEE International Conference on Image Processing (ICIP), 2006
156. J. Shao, R. Chellappa, F. Porikli, “Shape-regulated particle filtering for tracking non-rigid objects”, IEEE International Conference on Image Processing (ICIP), 2006
157. F. Porikli, T. Kocak, “Robust license plate detection using covariance descriptor in a neural network framework”, IEEE Advanced Video and Signal based Surveillance (AVSS), 2006
158. F. Porikli, X. Mei “Automatic spatial alignment of visible and IR images by fast image registration via joint gradient maximization”, SPIE Security+Defence, Electro-Optical Infrared Systems, 2006
159. F. Porikli, “Making silicon a little bit less blind: seeing & tracking humans”, SPIE OE Magazine, Electronic Imaging & Signal Processing, 2006 **(journal)**
160. F. Porikli, “Integral histogram: a fast way to extract histogram features”, IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2005
161. F. Porikli, J. Thornton, “Shadow flow: A recursive method to learn moving cast shadows”, IEEE International Conference on Computer Vision (ICCV), 2005
162. F. Porikli, J. Katz, E. Goubet, “Pedestrian tracking using thermal infrared imaging”, SPIE Defense & Security Symposium (DSS), 2006

163. F. Porikli, O. Tuzel, “Multi-kernel object tracking”, IEEE International Conference on Multimedia and Expo (ICME), 2005
164. F. Porikli, “Multiplicative background-foreground estimation under uncontrolled illumination using intrinsic images”, IEEE International Multi-Workshop – Motion, 2005
165. F. Porikli, “Ambiguity detection by data fusion: spectral clustering approach”, IEEE International Conference on Integration of Knowledge Intensive Multi-Agent Systems, 2005
166. F. Porikli, J. Shao, H. Maehara, “Extracting roads from aerial images using feature based classifiers, IAPR Conference on Machine Vision Applications, 2005
167. F. Porikli, O. Tuzel, “Object tracking in low-frame-rate video”, SPIE - Image and Video Communication and Processing, 2005
168. O. Tuzel, F. Porikli, P. Meer, “A Bayesian approach to background modeling and low frame rate tracking”, IEEE Conference on Computer Vision and Pattern Recognition (CVPR), Workshop on Real-time Machine Vision for Intelligent Vehicles, 2005
169. F. Porikli, “Computationally efficient histogram extraction for rectangular image regions”, SPIE Real-Time Image Processing, 2005
170. C. Wren, F. Porikli, “Waviz: spectral similarity for object detection”, IEEE International Multi-Workshop – PETS, 2005
171. F. Porikli, O. Tuzel, “Bayesian background generation based foreground detection”, 3rd ACM Workshop on Video Surveillance & Sensor Networks, ACM Multimedia, 2005
172. F. Zillani, S. Velastin, F. Porikli, L. Marcenaro, T. Kelliher, A. Cavallaro, P. Bruneaut, “Performance evaluation of event detection solutions: the CREDS experience”, IEEE Advanced Video and Signal based Surveillance (AVSS), 2005
173. F. Porikli, Y. Wang, “Automatic video object segmentation using volume growing and hierarchical clustering”, Journal of Applied Signal Processing, Issue on Object-Based and Semantic Image and Video Analysis, July 2004 **(journal)**
174. F. Porikli, T. Haga, “Event detection by eigenvector decomposition using object and frame features”, IEEE Conference on Computer Vision and Pattern Recognition (CVPR), IEEE Workshop on Human Modeling, Analysis and Synthesis, 2004
175. F. Porikli, “Trajectory distance metric using Hidden Markov Model based representation”, European Conference on Computer Vision (ECCV), IEEE PETS Workshop, 2004
176. F. Porikli, Clustering variable length sequences by eigenvector decomposition using HMMs”, IAPR International Conference on Pattern Recognition (ICPR), Workshop SSPR, 2004
177. F. Porikli, X. Li, “Traffic congestion analysis in compressed video without tracking”, IEEE International Conference on Intelligent Vehicles, 2004
178. F. Porikli, “Trajectory pattern detection by HMM parameter space features and eigenvector clustering”, IEEE International Conference on Multimedia and Expo (ICME), 2004
179. F. Porikli, “Nonlinear warping recovery by scan-line search using dynamic programming”, IEEE International Conference on Image Processing (ICIP), 2004
180. X. Li, F. Porikli, “A hidden Markov model framework for traffic event detection using video features”, IEEE International Conference on Image Processing (ICIP), Singapore, 2004
181. F. Porikli, “Automatic image segmentation by solving Eikonal equation based on Gaussian mixture models”, IS&T/SPIE Symposium on Electronic Imaging, 2004
182. F. Porikli, “Real-time video object segmentation for MPEG encoded video sequences”, IS&T/SPIE Symposium on Electronic Imaging, 2004
183. F. Porikli, “Multi-camera surveillance: object-based summarization approach”, Multisensor Surveillance Systems: The Fusion Perspective, G. Foresti, C. Regazzoni, P. Varshney (Eds.), 2003 **(book chapter)**
184. F. Porikli, O. Tuzel, “Human body tracking by adaptive background models and mean-shift”, IEEE International Conference on Vision Systems (ICVS), IEEE PETS Workshop, 2003
185. F. Porikli, “Road extraction by point-wise Gaussian models”, 17th SPIE-Aero-Sense, Algorithms and Technologies for Multi-spectral, Hyper-spectral, Ultra-spectral Imagery Conference, 2003

186. F. Porikli, “Sensitivity characteristics of cross-correlation distance metric and model function”, Proceedings of Conference on Information Sciences and Systems, 2003
187. F. Porikli, A. Divakaran, “Multi-camera calibration, object tracking and query generation”, invited paper, IEEE International Conference on Multimedia and Expo (ICME), 2003
188. F. Porikli, “Inter-camera color calibration by correlation model functions”, IEEE International Conference on Image Processing (ICIP), 2003
189. F. Porikli, Y. Wang, “Constrained region extraction of video objects by color masks and MPEG-7 descriptors”, IEEE International Conference on Multimedia and Expo (ICME), 2002
190. F. Porikli, “Automatic threshold determination of centroid-linkage region growing by MPEG-7 dominant color descriptors”, IEEE International Conference on Image Processing (ICIP), 2002
191. F. Porikli, “Accurate detection of edge orientation for color and multi spectral imagery”, IEEE International Conference on Image Processing (ICIP), 2001
192. F. Porikli, “Video object segmentation by volume growing using feature-based motion estimator”, 16th Int’l. Symposium on Computer Information Sciences, 2001
193. F. Porikli, Z. Sahinoglu, “An online renegotiation-based bandwidth management with circuit assignment for VBR traffic in communication networks”, Proceedings of 6th SCI, 2002
194. F. Porikli, Z. Sahinoglu, “Dynamic bandwidth allocation with optimal number of renegotiations in ATM networks”, IEEE ICCCN 2001, Scottsdale, 2001
195. F. Porikli, “Image simplification by robust estimator based reconstruction filter”, 16th International Symposium on Computer and Information Sciences, 2001
196. F. Porikli, Y. Wang, “An unsupervised multi-resolution object extraction algorithm using video-cubes”, IEEE International Conference on Image Processing (ICIP), 2001
197. F. Porikli, “Object segmentation of color video sequences”, IAPR International Conference of Computer Analysis of Images and Patterns (CAIP), 2001
198. F. Porikli, T. Keaton, “Unsupervised road extraction algorithm in low-resolution satellite imagery”, IAPR Pattern Recognition for Remote Sensing Workshop, 2000
199. F. Porikli, Y. Wang, C. Swain, “Adaptive stripe based patch matching for depth estimation”, IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP), 1997
200. F. Porikli, “Stripe mesh based disparity estimation by using 3-D Hough transform”, IEEE International Conference on Image Processing (ICIP), 1997
201. F. Porikli, Y. Wang, “Disparity estimation by patch matching”, IEEE PCS, Munich, 1997

PATENTS:

1. F. Porikli, A. Shrivastava, J. Thornton, Method for Generating High-Resolution Images using Regression Patterns, (9,734,558)
2. F. Porikli, M. Kocamaz, Method for detecting persons using 1D depths and 2D texture, (9,639,748)
3. T. Marks, O. Tuzel, F. Porikli, J. Thornton, J. Ni, Method for detecting 3D geometric boundaries in images of scenes subject to varying lighting, (9,418,434)
4. O. Tuzel, T. Marks, F. Porikli, J. Ni, Method for factorizing images of a scene into basis images, (9,384,553)
5. F. Porikli, A. Soni, Denoising of images with nonstationary noise, (9,262,808)
6. F. Porikli, F. Li, 3D object tracking in multiple 2D sequences, (9,076,227)
7. F. Porikli, F. Li, Method for simulating thoracic 4DCT, (8,989,472)
8. F. Porikli, H. Rao, Learning dictionaries with clustered atoms, (8,958,632)
9. F. Porikli, Y. Wang, Method for reducing blocking artifacts in images, (8,942,467)
10. F. Porikli, X. Shu, Method for recovering low-rank matrices and subspaces from data in high-dimensional matrices, (8,935,308)
11. F. Porikli, T. Y. Lee, Enhanced visualizations for ultrasound videos (8,781,183)

12. F. Porikli, H, Nguyen, Representing object shapes using radial basis function support vector machine classification (8,718,380)
13. O. Tuzel, F. Porikli, C. Hegde,“Upscaling natural images”, (8,620,073)
14. F. Porikli, “Image filtering by sparse reconstruction on affinity net", (8,494,305)
15. F. Porikli, V. Venkataraman, “Object detection using combinations of relational features in images”, (allowed on March 27, 2013)
16. F. Porikli, H. Ozkan, “Data driven frequency mapping for kernels used in Support Vector Machines”, (8,429,102)
17. F. Porikli, “Method for compressing textured images”, (8,433,148)
18. F. Porikli, “Method for detecting small targets in radar images using needle based hypotheses verification”, (8,405,540)
19. F. Porikli, A. Joshi, “Method for training multi-class classifiers with active selection and binary feedback”, (8,401,282)
20. F. Porikli, P. Pan, “Object Tracking with regressing particle”, (8,401,239)
21. F. Porikli, A. Joshi, “System and method for adapting generic classifiers for object detection in particular scenes using incremental learning”, (8,385,632)
22. R. Yim, S. Perli, F. Porikli, J. Zhang, “Method and system for coding information subject to motion blur”, (8,378,799)
23. F. Porikli, M. Hussein, “Method for tracking tumors in bi-plane images” (8,358,823)
24. O. Tuzel, F. Porikli, “Method for clustering samples with weakly supervised kernel mean shift matrices”, (8,296,248)
25. F. Porikli, H. Nguyen, “Method for representing objects with concentric ring signature descriptors for detecting 3D objects in range images”, (8,274,508)
26. F. Porikli, M. Hussein, “Method for normalizing displaceable features of objects in images” (8,224,072)
27. F. Porikli, R. Li, “Image segmentation using spatial random walks”, (8,218,869)
28. R. Yim, S. Saito, F. Porikli, J. Zhang, “Method and system for coding digital information in lane markings using an optical sensor”, (8,174,374)
29. F. Porikli, A. Joshi, “Active learning method for multi-class classifiers”, (8,140,450)
30. F. Porikli, “Method for filtering of images with bilateral filters and power images”, (8,139,888)
31. F. Porikli, Q. Yuan, “Method for tracking soft tissue masses in images using directed graphs”, (8,121,669)
32. F. Porikli, “Method for filtering of images with bilateral filters and integral histograms”, (8,081,836)
33. F. Porikli, A. Ruta, “Method for recognizing traffic signs”, (8,041,080)
34. F. Porikli, O. Tuzel, “Method and system for detecting and tracking objects in images”, (7,961,952)
35. Z. Sahinoglu, F. Porikli, “Constructing an energy matrix of a radio signal”, (7,916,778)
36. F. Porikli, O. Tuzel, “Detecting moving objects in video by classifying on Riemannian manifolds”, (7,899,253)
37. F. Porikli, X. Mei, “Jointly registering images while tracking moving objects with moving cameras”, (7,856,120)
38. F. Porikli, T. Parag, “Method for adaptively boosting classifiers for object tracking”, (7,840,061)
39. F. Porikli, “Method for filtering images with bilateral filters”, (7,835,586)
40. F. Porikli, “Method for filtering data with arbitrary kernel filters”, (7,826,676)
41. F. Porikli, Y. Ivanov, “Method for detecting objects left-behind in a scene”, (7,813,528)
42. F. Porikli, “Method for generating distance maps using scan lines”, (7,809,165)
43. F. Porikli, X. Mei, D. Brinkman, “Method for tracking objects in videos using forward and backward tracking (7,756,296)
44. F. Porikli, T. Kocak, “Detecting objects in images with covariance matrices”, (7,734,097)
45. F. Porikli, O. Tuzel, “Method for classifying data using an analytic manifold”, (7,724,961)
46. F. Porikli, O. Tuzel, “Method for constructing covariance matrices from data features”, (7,720,289)
47. F. Porikli, J. Katz, “Object segmentation using visible and infrared images”, (7,693,331)
48. F. Porikli, X. Mei, “Image registration using joint spatial gradient maximization”, (7,680,303)

49. P. Keaton, Q. Jiang, F. Porikli, Digital image edge detection and road network tracking method and system, (7,636,455) – *originally disclosed as: F. Porikli, T. Keaton, "Method for accurate edge orientation detection from color and multi-channel imagery by using line-to-vector transform", (20030223615)*
50. F. Porikli, O. Tuzel, "Method for tracking objects in videos using covariance matrices", (7,620,204)
51. F. Porikli, "Method for modeling cast shadows in videos", (7,574,043)
52. F. Porikli, "Method of extracting and searching integral histograms of data samples",(7,454,058)
53. F. Porikli, "Recovering a non-linear warping function from images", (7,483,572)
54. O. Tuzel, F. Porikli, "Modeling low frame rate videos with Bayesian estimation", (7,466,842)
55. F. Porikli, "Usual event detection in a video using object and frame features", (7,426,301)
56. F. Porikli, O. Tuzel, "Tracking objects in low frame rate videos", (7,418,113)
57. C Wren, F. Porikli, "Modeling scenes in videos using spectral similarity (7,415,164)
58. F. Porikli, X. Li, "Traffic event detection in compressed videos", (7,403,664)
59. J. Shao, F. Porikli, "Subspace projection based non-rigid object tracking with particle filters", (7,376,246)
60. F. Porikli, J. Shao, "Detecting roads in images using feature-based classifiers", (7,359,555)
61. F. Porikli, "Foreground detection using intrinsic images", (7,359,552)
62. F. Porikli, "Image segmentation by base point selection and wavefront propagation", (7,349,573)
63. F. Porikli, "Method for determining similarities between data sequences using cross-correlation matrices and deformation functions", (7,328,111)
64. F. Porikli, "Hidden Markov model based object tracking and similarity metrics", (7,263,472)
65. F. Porikli, O. Tuzel, D. Brinkman "Adaptive background image updating", (7,224,735)
66. Z. Sahinoglu, F. Porikli, F. Matsubara, J. Cukier "Method and system for assigning circuits to a new service request in a communications networks", (7,209,438)
67. F. Porikli, H. Sun, A. Divakaran, "Method for segmenting 3D objects from compressed videos", (7,142,602)
68. F. Porikli, "Image simplification using a reconstruction filter", (7,103,229)
69. F. Porikli, H. Sun, "Method and apparatus for decoding a video bitstreams to reduced spatial resolutions", (7,006,572)
70. F. Porikli, Z. Sahinoglu, "Method and system for minimizing error in bandwidth allocation with an optimal number of renegotiations", (7,027,403)
71. F. Porikli, "Identifying moving objects in a video using volume growing and change detection masks", (6,904,159)
72. F. Porikli, "Method for determining compactness ratios of multiple data and signal sets", (6,885,765)
73. F. Porikli, Y. Wang, "Method for segmenting multi-resolution video objects", (6,859,554)

OTHER:

- Science fiction and retro-technology aficionado, US citizen