CURRICULUM VITAE

Matthew A. Turk, PhD
IEEE Fellow, IAPR Fellow

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PRIMARY RESEARCH INTERESTS AND EXPERTISE:

Computer vision and pattern recognition, human-computer interaction, augmented reality, machine learning, biometrics, computer graphics and imaging, digital media, and mobile computing.

RECENT LITIGATION EXPERIENCE:

2019-pres. Sidley Austin LLP (Washington, DC)
Expert consultant for IPR litigation representing Microsoft (related to image alignment).

2016-pres. Mayer Brown LLP (Los Angeles, CA)
Expert consultant for litigation representing Facebook (related to face recognition and deep learning).

2018 Morgan, Lewis, & Bockius LLP (Palo Alto, CA)
Expert consultant for IPR patent litigation representing tech firm (related to authenticaion).

2017-2018 Latham & Watkins LLP (San Francisco, CA)
Expert consultant for patent litigation representing tech firm (related to mobile digital image processing).

2014-2016 Gardner Linn Burkhart & Flory (Grand Rapids, MI)
Expert witness for patent litigation in IPR cases covering automobile imaging technologies, representing Magna Electronics Inc.

2014-2015 Williams & Connolly LLP (Washington, DC)
Expert witness for patent litigation in case covering pattern recognition and face recognition technologies, representing Google Inc.

2013-2015 Cooley LLP (San Diego, CA)
Expert witness for patent litigation in case covering image and face matching and pattern recognition systems. Represented Face.com (Facebook) against FaceDouble. Expert consulting and declaration for European patent application appeal involving biometrics technologies. Represented EyeLock, Inc. Represented Facebook against Blue Spike.

2013 Bristows (London, U.K.)
Expert witness for patent litigation in case covering camera-based interaction, gaming, and virtual reality. Represented Philips against Nintendo.

2012-2014 Birch, Stewart, Kolasch & Birch, LLP (Falls Church, VA)
Expert witness for patent litigation in case covering face recognition and gaming technologies. Representing Intelligent Verification Systems, LLC against Microsoft Corp.

2011-2012 Quinn Emanuel Urquhart & Sullivan, LLP (San Francisco, CA)
Expert witness for patent litigation in Samsung vs. Apple, representing Samsung. Covered two patents related to image display and multimedia email on mobile devices. Represented Samsung against Apple.

2010 Thompson Coburn, LLP (St. Louis, MO)
Expert witness for patent infringement dispute in FaceDouble vs. Coca Cola and Crispin, Porter & Bogusky, LLC, representing Coca Cola and Crispin, Porter & Bogusky. Covered patents relating to face recognition technology. Represented Coca Cola and Crispin, Porter & Bogusky against FaceDouble.

PROFESSIONAL EXPERIENCE:

2000-pres. **University of California, Santa Barbara** Santa Barbara, CA
Chair, Department of Computer Science (2017-pres.)
Professor (2005-pres.), Associate Professor (2000-2005)
Appointments: Computer Science (67%), Media Arts & Technology (33%), Electrical & Computer Engineering (0%), Dynamical Neuroscience (0%)
Co-director, Four Eyes Laboratory
Chair, Media Arts and Technology (2005-2010)
Vice Chair, Media Arts and Technology (2005)

2014-2016 **Caugnate** Santa Barbara, CA
Co-founder and CEO
Startup company commercializing remote telecollaboration software. Acquired by PTC Inc.

2012 **University of Oulu** Oulu, Finland
Visiting Professor, Department of Computer Science & Engineering (Jun-Aug)

2011 **University of Tampere** Tampere, Finland
Visiting Professor, School of Information Science (Aug-Sept)

2003, 2004 **Ecole Polytechnique Fédérale de Lausanne (EPFL)** Lausanne, Switzerland
Visiting faculty – August 2003, July 2004

1994-2000 **Microsoft Research** Redmond, WA
Researcher
Founding member of the Vision Technology Research Group; research in computer vision, vision-based human-computer interaction and perceptual user interfaces.

1993-94 **Teleos Research** Palo Alto, CA
Computer Scientist
Research in vision-based interaction with people, object recognition,

mobile robots.

1993	**Stanford University** Lecturer Computer Science Department	Palo Alto, CA
1992	**LIFIA-IMAG** Postdoc / Visiting Researcher Research in face recognition and visual interpretation of human gestures, applications to human-computer interfaces.	Grenoble, France
1991	**Massachusetts Institute of Technology** Postdoctoral Fellow, MIT Media Laboratory Research on human face recognition for applications to security and man-machine communication; image database indexing and retrieval.	Cambridge, MA
1984-87	**Martin Marietta Denver Aerospace** Senior Engineer Research in vision algorithm development and implementation for mobile robot navigation (DARPA Autonomous Land Vehicle program).	Denver, CO
1983-84	**University of Pittsburgh** Computer Technician, Dept. of Neurophysiology Electronics, image processing, and computer system support.	Pittsburgh, PA

EDUCATION:

1987-91	**Massachusetts Institute of Technology** Ph.D. from the Media Laboratory, Vision and Modeling Group Committee: Alex P. Pentland (advisor), Ted Adelson, Nicholas Negroponte Dissertation: *Interactive-Time Vision: Face Recognition as a Visual Behavior* The dissertation introduced "Eigenfaces," an appearance-based approach to face and object recognition. A prototype system was built to track and recognize people as they entered a room; we showed how this approach could be used to represent, detect, and recognize other object properties such as facial expression. Papers on this work received an "Outstanding Paper" award (1991) and a "Most Influential Paper of the Decade" award (2000).	Cambridge, MA
1982-84	**Carnegie Mellon University** M.S. in Electrical and Computer Engineering Advisors: Matt Mason, Marc Raibert Thesis: *A Fine Motion Planning Algorithm for Robots* The thesis investigated robot manipulation planning techniques in the face of uncertainty in sensing and world modeling. A 2D planner was developed to automatically construct a plan, by reasoning in configuration space, to successfully manipulate an object along a constrained path.	Pittsburgh, PA
1978-82	**Virginia Tech (VPI&SU)**	Blacksburg, VA

B.S. in Electrical Engineering, *magna cum laude*
Advisor: Robert Haralick

Senior Honors Project in computer vision; segmentation algorithms implemented in the GYPSY image processing system.

HONORS AND AWARDS:

2016 *Best Paper Honorable Mention* at the 2016 IEEE Symposium on 3D User Interfaces (3DUI) for "Interpreting 2D Gesture Annotations in 3D Augmented Reality," with B. Nuernberger, K. Lien, and T. Höllerer

2015 *Winner, ACM Multimedia Open Source Software Competition* for "Theia: A Fast and Scalable Structure-from-Motion Library," with C. Sweeney and T. Höllerer

2015 *Best Short Paper Award* at the 2015 International Symposium on Mixed and Augmented Reality (ISMAR), for "Efficient Computation of Absolute Pose for Gravity-Aware Augmented Reality," with C. Sweeney, B. Nuernberger, and T. Höllerer

2015 *Outstanding Reviewer Award* at the 2015 IEEE International Conference on Automatic Face and Gesture Recognition

2014 Elected as *IAPR Fellow* (International Association for Pattern Recognition) for "contributions to computer vision and vision-based interaction"

2014 Received inaugural *ICMI Community Service Award* for organizational and service contributions to the multimodal interaction research community

2012 Elected as *IEEE Fellow* for "contributions to computer vision and perceptual interfaces"

2012 *Best Paper Award* at the 2012 International Symposium on Mixed and Augmented Reality (ISMAR), for "Live tracking and mapping from both general and rotation-only camera motion," with S. Gauglitz, C. Sweeney, J. Ventura, and T. Höllerer

2012 *Best Paper Honorable Mention* at the 2012 International Conference on Human-Computer Interaction with Mobile Devices and Services (MobileHCI), for "Integrating the physical environment into mobile remote collaboration," with S. Gauglitz, C. Lee, and T. Höllerer

2012 *Best Student Paper Finalist* (PhD student Victor Fragoso) at the 2012 International Conference on Image Processing (ICIP), for "Locating Binary Features for Keypoint Recognition using Noncooperative Games," with V. Fragoso and J. Hespanha

2012 Selected to participate in the National Academy Keck Futures Initiative on The Informed Brain in a Digital World (invitation only)

2011 Awarded the *2011-2012 Fulbright-Nokia Distinguished Chair in Information and Communications Technologies*

2010 *Best Paper Award* at the 2010 IEEE International Workshop on Mobile Vision, for "Location-based augmented reality on mobile phones," with R. Paucher

2006 *One of the Best Image Processing and Computer Vision Papers* in SIBGRAPI 2006, for "Dealing with multi-scale depth changes and motion in depth edge detection," with R. Feris and R. Raskar

2004 *Best Paper Award* at the 2004 IEEE Workshop on Real-Time Vision for Human Computer Interaction, for "Fast 2D hand tracking with flocks of features and multi-cue integration," with M. Kölsch

2004 *Communication and Technology Top Paper Award*, for "Non-zero sum gaze and persuasion,"

	with J. Bailenson, A. Beal, J. Blascovich, and J. Loomis; selected for presentation at the 54th Annual Conference of the International Communication Association (2004)
2000	*Most Influential Paper of the Decade Award* from the International Association for Pattern Recognition (IAPR) Workshop on Machine Vision Applications (MVA-2000)
1999	Selected to attend the National Academy of Engineering Symposium on Frontiers of Engineering (one of 70 chosen nationwide)
1992	Selected to attend *Comparative Approaches to Cognitive Science* international summer school (with scholarship)
1991	C.N.O.U.S. post-doctoral fellowship grant (France)
1991	IEEE Computer Society Outstanding Paper Award, Conference on Computer Vision and Pattern Recognition (CVPR), for "Face recognition using eigenfaces," with A. Pentland
1988-90	SPIE Scholarships in Optical Engineering
1990	MIT Japan Science, Technology, Management Prize
1988	Author of the Year award, Martin Marietta Information Systems , for "VITS – a vision system for autonomous vehicle navigation," with D. Morgenthaler, K. Gremban, and M. Marra
1978-82	Marshall Hahn Engineering Scholarship (Virginia Tech)

RECENT INVITED TALKS:

Jul 2019	Keynote speaker, 14th International Symposium on Signals, Circuits, and Systems (Iasi, Romania)
Aug 2018	Invited talk, Forum on The Future of ISEA (Port Hueneme, CA)
Mar 2018	University of Primorska (Slovenia)
Mar 2018	Arizona State University
Jul 2017	PTC (San Diego, CA)
Jun 2017	Keynote speaker, Global Virtual Reality Conference (CVRC) (Shanghai, China)
Jun 2017	Invited talk, Shanghai Tech (Shanghai, China)
Nov 2016	Keynote speaker, The Chinese Conference on Pattern Recognition (Chengdu, China)
Oct 2016	Invited talk, Science and Engineering Council of Santa Barbara (Santa Barbara, CA)
Apr 2016	Invited talk, Field Service USA 2016 (Palm Springs, CA)
Apr 2016	Invited talk, Computer Science Academy, Santa Barbara High School (Santa Barbara, CA)
Mar 2016	Invited panelist, Graduate Student Workshop on Computing, UCSB (Santa Barbara, CA)
Feb 2016	University of Massachusetts, Amherst (Amherst, MA)
Oct 2015	University of Notre Dame (South Bend, IN)
Sept 2015	Invited talk, Andreessen Horowitz Academic Roundtable (Menlo Park, CA)
Sept 2015	Invited talk, Citrix Online (Santa Barbara, CA)
June 2015	Keynote speaker, 4th International Conference on Informatics, Electronics, and Vision (Fukuoka, Japan)
May 2015	Keynote speaker, 11th IEEE International Conference on Face and Gesture Recognition (Ljubljana, Slovenia)
May 2015	Invited panelist, 11th IEEE International Conference on Face and Gesture Recognition (Ljubljana, Slovenia)
Mar 2015	Invited speaker, San Marcos High School Distinguished Educator/Innovative Researcher (Santa Barbara, CA)

Dec 2014	Keynote speaker, 17th International Conference on Computer and Information Technology (Dhaka, Bangladesh)
Dec 2014	Daffodil University (Dhaka, Bangladesh)
Nov 2014	Zhejiang University (Hangzhou, CA)
Nov 2014	CTO Forum: Rethink Disruption (San Francisco, CA)
Jan 2014	Keynote speaker, Gsolutionz, Inc. (Carpinteria, CA) annual company meeting
Dec 2013	Panelist, ICCV Workshop on Visual Commerce
Oct 2013	Ohio State University
Jul 2013	Google (Mountain View, CA)
Apr 2013	Amazon (Seattle, WA)
Sept 2012	Proceedings of the IEEE 100th Anniversary Forum on Improving Quality of Life Through Engineering Innovations (scheduled keynote)
Aug 2012	University of Oulu, Finland
May 2012	Hong Kong University of Science and Technology (Invited workshop talk)
Apr 2012	Qualcomm Research (San Diego, CA)
Aug 2011	University of Oulu, Finland
Aug 2011	University of Tampere, Finland
Aug 2011	Nokia Innovation Center, Tampere, Finland
Apr 2011	University of Texas, Austin
Mar 2011	Keynote speaker, Infoplosion Symposium (Tokyo, Japan)
Mar 2011	University of Kyoto
Feb 2011	University of Houston
Jan 2011	University of California, Riverside
Nov 2010	Keynote speaker, 15th Ibero-American Congress on Pattern Recognition (Sao Paulo, Brazil)
Sept 2010	Keynote speaker, IEEE Fourth International Conference On Biometrics: Theory, Applications And Systems (Washington, D.C.)
Jul 2010	Lecturer, Sino-USA Summer School in Vision, Learning and Pattern Recognition (Xi'an, China)
Feb 2010	University of Denver (Denver, CO)
Apr 2010	Rensselaer Polytechnic Institute (Troy, NY)
Jun 2009	Nokia Research Center, Palo Alto (CA)
Aug 2008	University of Sao Paulo (Brazil)
May 2008	University of Southern California (Los Angeles, CA)
Mar 2008	COSYNE Workshop on Dynamic Faces (Snowbird, UT)
Feb 2008	Virginia Tech (Blacksburg, VA)
Dec 2007	University of Tampere (Finland)
Sept 2007	Infocomm Horizons Seminar 2007 (Singapore)
Sept 2007	Institute for InfoComm Research (Singapore)
May 2007	Northwestern University (Evanston, IL)
May 2007	Michigan State University (East Lansing, MI)
Feb 2007	DARPA (Arlington, VA)
Jan 2007	Northwestern University (Evanston, IL)

GRANTS, CONTRACTS, AND INDUSTRY GIFTS:

2019-2022.	"Robust Inside-Out Simultaneous Localization and Mapping for Environment Monitoring and Equipment Maintenance," U.S. Navy (PI), $447,845
2018-pres.	"EAGER: Attention-Aware Mixed Reality Interfaces," NSF (Co-PI), $244,997
2015	Equipment gift (in-kind), Nokia Corp., OZO professional VR camera, $60,000
2015-2017	"One+ Class Support Vector Machine Learning for Interactive Object Detection," U.S. Navy, $47,000
2015-2016	"Improving Live Telecollaboration," Citrix Online, $80,000
2015	Equipment gift (in-kind), FLIR Systems, Inc.: FLIR ONE thermal infrared cameras
2014-2015	"Eye Gaze Correction for Improving Video Interaction," Citrix Online, $70,500
2014-2017	"Crowd-Sourcing the World: Scalable Methods for Dynamic Structure from Motion," NSF (PI), $477,428
2012-2015	"US-Finland Planning Visit: Transformed Social Interaction and Telecollaboration for Collaborative Learning," NSF (PI), $40,791
2012-2016	"Telecollaboration in Physical Spaces," NSF (PI), $499,970
2012-2015	"Interactive Panoramas on Google Glass," Google, Inc. Google Glass Research Awards Program, $18,000 + $4500 equipment gift (in-kind)
2011-2012	Equipment gift (in-kind), NVIDIA Research: Tegra Tablet, $1500
2009-2013	"CRI: Equipping the Allosphere, an Environment for Immersive Data Exploration," NSF (PI), $749,894
2010	Research and equipment gift funding, Nokia Corp., $9,600
2009	Equipment gift (in-kind), Nokia Corp., $11,033
2009	Equipment gift (in-kind), HRL Labs, $16,832
2009	Research gift funding, Nokia Corp., $10,000
2008-2011	Internal funding for Allosphere facility and research, UCSB (PI), $622,052
2008-2011	"MRI: Development of the Allosphere, an Immersive Instrument for Scientific Exploration," NSF (PI), $500,000
2008-2009	"Scalable Visualization and Constrained Interaction for Large Graphs – Supporting the Collaborative Analysis of High-dimensional Data Sets," NSF (Co-PI), $263,000
2006-2007	"Scalable Visualization and Constrained Interaction for Large Graphs – Supporting the Collaborative Analysis of High-dimensional Data Sets," NSF (Co-PI), $230,000
2008-2009	"Multimodal Wireless Sensor Network Infrastructure," DARPA (Key personnel), $655,174
2006-2007	"Scalable Visualization and Constrained Interaction for Large Graphs," DOD/NSF (Co-PI), $234,321
2005-2009	"A Tangible Interaction Window between Korea and the United States," Korean Institute of Science and Technology (Co-PI), $274,605
2006	"Foundations of Multimedia Research," UC Opportunity Award, $14,950
2005-2008	"Detecting and Analyzing Discontinuities in Computer Vision," NSF (PI), $328,303
2003	Microsoft unrestricted gift, $65,000
2003	"STTR Phase I: Sensors and Methods to Handle UAV," U.S. Navy Air Systems Command (PI, subcontract to Develosoft Corp.), $21,000
2003	Lawrence Livermore Laboratory UCRP Award (PI), $40,000
2003	Microsoft Research Learning Science and Technology (co-PI), $40,000

2003 Mitsubishi Equipment Gift, $650
2003 UCSB Instructional Improvement Grant (PI), $12,150
2003 DiMI Opportunity Award (PI), $14,000
2003 Microsoft Equipment Gifts, $50,000
2003-2008 NSF, "Digital Multimedia IGERT: Graduate Training Program in Interactive Digital Multimedia" (Co-PI), $3,426,376
2002-2005 NSF, "ITR: Using Virtual Environment Technology to Understand and Augment Social Interaction" (Co-PI), $1,100,000
2002 UCSB Research Across Disciplines (Co-PI), $14,400
2002 UCSB Research Across Disciplines (Co-PI), $11,000
2001 DiMI Opportunity Award (Co-PI), $8000

TEACHING EXPERIENCE:
(* - *created new course*)

2000-pres. *Graduate courses*: Human Computer Interaction Technologies*, Computer Imaging*, Mobile Imaging*, Computer Vision, Probabilistic Models and Methods in Computer Science*, Artificial Intelligence, Multimodal Interaction on Mobile Computing Platforms*
Undergraduate courses: Foundations of Computer Science, Computer Graphics, Artificial Intelligence*, Machine Learning, Introduction to Computer Vision, Introduction to C, C++, and Unix
Seminar courses: Topics in Computer Vision, Human-Computer Interaction, A History of Computing*, Perceptual User Interfaces*, Visualization, Media Arts and Technology*
2012 Mobile Computer Vision course, Computer Science and Engineering Department, University of Oulu, Finland
2011 Computational Illumination course, School of Information Sciences, University of Tampere, Finland
2010 Guest lecturer, Sino-US Summer School in Vision, Learning, and Pattern Recognition (Perception, Motion, and Events), Xi'an, China
1993 Lecturer, Stanford University – Taught *Concurrent Programming* (CS140) in the Department of Computer Science, televised via the Stanford Instructional Television Network.
1990, 1991 MIT Media Lab – Co-organized and co-taught *Practical Issues in Color Processing* (4.999), lecturing on color imaging and human color vision.*
1989-90 MIT – Guest lecturer at MIT Summer Course on flight simulation.
1989-90 Graduate Tutor at "pika," an MIT undergraduate living group. Responsible for tutoring students in a variety of subjects.
1986 Created and taught *Computer Vision* course (CS-369) for the Martin Marietta Institute *
1985-86 Organized weekly computer vision seminars at Martin Marietta. Lectured on topics in vision and AI.

RECENT PROFESSIONAL ACTIVITIES AND SERVICE:

Journal editorships, conference board positions, professional society positions, key service:
Chair, Editor-in-Chief Search Committee, ACM Transactions on Intelligent and Interactive Systems (2015)

Founding Associate Editor, ACM Transactions on Intelligent and Interactive Systems (2009-present)
Associate Editor, Journal of Image and Vision Computing (2006-present)
Associate Editor, International Journal of Computer Vision and Signal Processing (2011-present)
Guest Editor, Special Issue on Behavior Understanding for Arts and Entertainment, ACM Transactions on Interactive Intelligent Systems (TiiS)
Guest Editor, Special Issue on Machine Learning for Vision Based Motion Analysis, Journal of Image and Vision Computing (2012)
Guest Editor, Special Issue on Real-World Face Recognition, IEEE Transactions on Pattern Analysis and Machine Intelligence (PAMI) (2011)
Guest Editor, Special Issue on Mobile Computer Vision, International Journal of Computer Vision (2011)
Chair, ICMI Advisory Board (2006-2009)
Chair, IEEE PAMI-TC Open Access Committee (2013)
Member, Advisory Board, IEEE International Conference on Imaging, Vision, & Pattern Recognition (2016-present)
Member, ICMI Advisory Board (2003-2015)
Member, Traumatic Brain Injury Resource Optimization Center Advisory Board (2008-present)
Member, STEAM Advisory Council, MOXI: The Wolf Museum of Exploration and Innovation, Santa Barbara, CA (2012-present)
Member, Project Career Advisory Board, National Institute on Disability and Rehabilitation Research (NIDDR) Field Initiated Program research study on Cognitive Support Technologies for Traumatic Brain Injury, (2013-present)
Member, IEEE Automatic Face and Gesture Recognition Steering Committee (2011-2015)
Member, IEEE International Conference on Social Computing Steering Committee (2010-2015)
Member, External Review Committee for Korean Institute of Science and Technology (2009)
Member, NSF Committee of Visitors for CISE-IIS (2005)
Member, DARPA IXO Immersive Operations Planning Panel (2006-2007)
Member, ACM Transactions on Interactive Intelligent Systems (TiiS) Best Article Award Committee (2015)
Member, ICMI Career Awards Committee (2016)
External Reviewer, Virginia Tech Center for Human Computer Interaction (2017)

Key organizing committee positions:

IEEE Conference on Computer Vision and Pattern Recognition (CVPR) (General Chair 2014, Area Chair 2001, 2007, 2009, 2012, 2017, 2019)
International Conference on Computer Vision (ICCV) (Area Chair 2019)
IEEE Winter Conference on Applications of Computer Vision (WACV) (Program Chair 2017, Area Chair 2005)
International Conference on Informatics, Electronics & Vision (General Chair 2012, 2013, 2014, 2015, 2016, 2019)
IEEE Conference on Automatic Face and Gesture Recognition (General Chair 2011, Special Session Chair 2008, 2013, Test of Time Award Committee 2013)
ACM Conference on Multimedia (General Chair 2006)
International Conference on Multimodal Interfaces (ICMI) (General Chair 2008, 2019, Paper Awards Committee Chair 2007, 2008, Program Chair 2004, Area Chair 2005, 2006, Publicity Chair 2010)
ACM CHI (Area Chair 2001, Area Chair 2013, Associate Chair for CHI Notes 2006)

IEEE Workshop on Analysis and Modeling of Faces and Gestures (AMFG) (General Chair 2018)
ACM Conference on Intelligent User Interfaces (IUI) (Senior Program Committee 2018)
IEEE Workshop on CVPR for Human Communicative Behavior Analysis (2008, 2009, 2010, 2011)
IEEE Workshop on Machine Learning for Vision-Based Motion Analysis (2011)
Workshop on Media Arts, Science, and Technology (2009)
Workshop on Perceptive User Interfaces (2001)
Workshop on Multimodal User Authentication (2003, 2006)
DiMI Workshop on Perceptive Animated Interfaces (2003)
NSF Virtual Human Workshop (2004)
Award Committee, Outstanding Young Researcher in Automatic Human Behaviour Analysis (2011)

STUDENTS SUPERVISED:

Postdoctoral researcher supervised:

Changbo Hu (2001-2003)
Ismo Rakkolainen (2004-2006)
Jae Sik Chang (2005-2007)
Chunghoon Kim (2007-2009)
Masahiro Toyoura (2008-2009)
Erno Makinen (2009)
Stefan Arisona (2007-2008)
Julia Kuosmanen (2015)
Steffen Gauglitz (2014)

Ph.D. Thesis Committees Chaired:

Mathis Kölsch, 2004
Rogerio Feris, 2006
Ya Chang, 2006
Haiying Guan, 2007
Longbin Chen, 2010
Daniel Vaquero, 2012
Steffen Gauglitz (co-chair), 2014
Victor Fragoso, 2014
Chris Sweeney (co-chair), 2016
Kuo-Chin Lien (ECE), 2016
Domagoj Baricevic (co-chair), 2016
Dianna Han, 2017
Ben Nuernberger (co-chair), 2017
Peter Zhu Fu, current
Jedrzej Kozerawski, current
Yi Ding, current

NON-LITIGATION CONSULTING:

2016-2018 PTC, Inc. (San Diego, CA)
Technical consulting on augmented reality for remote collaboration

2013-2018 Kent State University
NIDRR Project Career – Development of technology to support the transition of students with traumatic brain injuries from postsecondary education to employment

2011-2013 3DiVi Inc. (Chelyabinsk, Russia) – 3D gesture recognition

2011-2012 InTouch Health, Inc. – Computer vision

2009 Scholastic, Inc.

2007 I2R, Singapore

2006 Capstone Press for Inventions and Discovery

2005 National ICT Australia (NICTA), Sydney, Australia

2004 Biometrics Engineering Research Center, Yonsei University (Korea)

2004 Korea Institute of Science and Technology (KIST), Seoul, Korea

2004 Samsung Corporation (Korea)

2001 Toyon Corporation (Santa Barbara)

2000 Startup company managed by incubator Global Technology (Los Angeles)

PATENTS:

2017 Pending U.S. patent application – "Systems and methods for augmented reality-based remote collaboration," with S. Gauglitz, B. Nuernberger, and T. Höllerer

2016 U.S. Patent #9,495,761 – "Environment Mapping with Automatic Motion Model Selection," with S. Gauglitz, C. Sweeney, J. Ventura, and T. Höllerer

2004 U.S. Patent #6,674,877 B1 – "System and method for visually tracking occluded objects in real time," with N. Jojic

1992 US Patent #5,164,992: "A Face Recognition System," with A. Pentland

OPEN SOURCE SOFTWARE, DATA SETS:

2014 Theia: A Fast and Scalable Structure-from-Motion Library, available at http://www.theia-sfm.org/
Winner, ACM Multimedia Open Source Software Competition (C. Sweeney, T. Höllerer, M. Turk)

2010 Visual tracking dataset with ground truth, available at http://ilab.cs.ucsb.edu/index.php/datasets

2009 Partial shape matching source code, available at https://code.google.com/p/shapematching/source/list

2004 "The HandVu Vision-Based Hand Gesture Interface," available at http://www.movesinstitute.org/~kolsch/HandVu

PEER-REVIEWED DEMONSTRATIONS:

2014 "World-Stabilized Annotations and Virtual Scene Navigation for Remote Collaboration," S. Gauglitz, B. Nuernberger, M. Turk, and T. Höllerer, ACM Conference on User Interface Software and Technology (UIST), Honolulu, HI, October 2014.

2012 "A Prototype Setup to Integrate the Physical Environment into Mobile Remote Collaboration," S. Gauglitz, C. Lee, M. Turk, and T. Höllerer, MobileHCI, San Francisco, September 2012.

2005 "Depth Edges in Real Time using Multi-Flash Camera," A. Agrawal, V. Branzoi, R. Chellappa, R. Feris, R. Raskar, K. Tan, and M. Turk, CVPR, New York, 2005.

2004 "HandVu – Vision-Based Hand Gesture Recognition," M. Kölsch, M. Turk, and T. Höllerer), ISMAR '04, Arlington, VA, Oct 31-Nov 5, 2004

REFEREED PUBLICATIONS:

P. Shukla, C. Elmadjian, R. Sharan, V. Kulkarni, M. Turk, and W. Y. Wang, "What should I ask? Using conversationally informative rewards for goal-oriented visual dialog," Association for Computational Linguistics (ACL), Florence, Italy, July-August 2019.

B. Nuernberger, T. Höllerer, and M. Turk, "Hybrid orbiting-to-photos in 3D reconstructed visual reality," ACM Symposium on Virtual Reality Software and Technology (VRST), Tokyo, Japan, November 2018.

I. Rakkolainen, R. Raisamo, M. Turk, and T. Höllerer, "Illumination for 360 degree cameras" (poster), ACM Symposium on Virtual Reality Software and Technology (VRST), Tokyo, Japan, November 2018.

Y. Gizatdinova, O. Špakov, O. Tuisku, M. Turk, and V. Surakka, "Gaze and head pointing for hands-free text entry: applicability to ultra-small virtual keyboards," ACM Symposium on Eye Tracking Research & Applications (ETRA), Warsaw, Poland, June 2018.

P. Shukla, H. Sadana, A. Bansal, D. Verma, C. Elmadjian, B. Raman, and M. Turk, "Automatic cricket highlight generation using event-driven and excitement-based features," 4th International Workshop on Computer Vision in Sports (CVsports), Salt Lake City, June 2018.

J. Kozerawski and M. Turk, "CLEAR: Cumulative LEARning for One-Shot One-Class Image Recognition," IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR), Salt Lake City, June 2018.

B. Nuernberger, M. Turk, and T. Höllerer, "Evaluating snapping-to-photos virtual travel interfaces for 3D reconstructed visual reality," ACM Symposium on Virtual Reality Software and Technology (VRST), Gothenburg, Sweden, November 2017.

V. Fragoso, C. Sweeney, P. Sen, and M. Turk. "ANSAC: Adaptive Non-Minimal Sample and Consensus," British Machine Vision Conference (BMVC), London, September 2017.

I. Rakkolainen, R. Raisamo, M. Turk, and T. Höllerer, "Field-of-View Extension for VR Viewers," Mindtrek 2017: 21th International Technology Conference, Tampere, Finland, September 2017.

D. Baričević, T. Höllerer, P. Sen, and M. Turk, "User-perspective AR magic lens from gradient-based IBR and semi-dense stereo," IEEE Transactions on Visualization and Computer Graphics, Vol. 23, Issue 7, pp. 1838-1851, 2017.

I. Rakkolainen, R. Raisamo, M. Turk, and T. Höllerer, "Extreme field-of-view for head-mounted displays," 3DTV Conference (3DTV-CON), Copenhagen, Denmark, June 2017.

D. Baričević, T. Höllerer, and M. Turk, "Densification of semi-dense reconstructions for novel view generation of live scenes," IEEE Winter Conference on Applications of Computer Vision (WACV), Santa

Rosa, CA, March 2017.

I. Rakkolainen, M. Turk, and T. Höllerer, "A superwide-FOV optical design for head-mounted displays," International Conference on Artificial Reality and Telexistence / European Symposium on Virtual Environments (ICAT-EGVE), Little Rock, AR, December 2016.

D. Baričević, T. Höllerer, P. Sen, and M. Turk, "User-perspective AR magic lens from gradient-based IBR and semi-dense stereo," IEEE Transactions on Visualization and Computer Graphics, Vol. 23, Issue 7, pp. 1838-1851, 2017.

V. Fragoso, W. Scheirer, J. Hespanha, and M. Turk, "One-class slab support vector machine," International Conference on Pattern Recognition, Cancun, Mexico, December 2016.

I. Rakkolainen, M. Turk, and T. Höllerer, "A compact, wide-FOV optical design for head-mounted displays," ACM Symposium on Virtual Reality Software and Technology (VRST), Munich, Germany, November 2016.

B. Nuernberger, K.-C. Lien, L. Grinta, C. Sweeney, M. Turk, and T. Höllerer, "Multi-view gesture annotations in image-based 3D reconstructed scenes," ACM Symposium on Virtual Reality Software and Technology (VRST), Munich, Germany, November 2016.

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