
GERARD G. MEDIONI

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EDUCATION:

PhD.	Computer Science, 1983
	University of Southern California
Master of Science	Computer Science, 1980
	University of Southern California
Ingénieur	Informatique, 1977
	École Nationale Supérieure des Télécommunications, Paris, France

EMPLOYMENT:

1999 - current	Professor
	Departments of Computer Science and Electrical Engineering, University of Southern California
2001 - 2007	Chairman
	Department of Computer Science, University of Southern California
2000-2001	Chief Technical Officer (while on sabbatical leave)
	Geometrix, Inc., San Jose, CA
1992-1996	President and CEO
	I.C. Vision, Los Angeles, CA
1992 - 1999	Associate Professor
	Departments of Computer Science and Electrical Engineering, University of Southern California
1987-1992	Assistant Professor
	Departments of Computer Science and Electrical Engineering, University of Southern California
1983-1987	Research Assistant Professor
	Departments of Electrical Engineering and Computer Science, University of Southern California
1979-1983	Research Assistant
	Intelligent Systems Group, University of Southern California
1977-1978	Research Engineer
	Underwater Signal Processing Division, Thomson- CSF, Cagnes s/Mer, France

CONSULTING ACTIVITIES:

- **Advisory Board** Member of Primesense
- **Scientific Advisory Board** Member of DXO Labs
- **Consultant** KLA-Tencor

PROFESSIONAL ACTIVITIES:

- **Member of Editorial Board**, International Journal of Image and Video Processing (IJIVP), Hindawi Publishing Corporation
- **Member of the Editorial Board**, Pattern Recognition and Image Analysis, Interperiodica Publishing, Birmingham, Alabama
- **Advisory Board Member**, IEEE Transactions on Pattern Analysis and Machine Intelligence
- **Advisory Board Member**, Elsevier Image and Vision Computing Journal
- **Member of the Editorial Board**, International Journal of Computer Vision, Springer-Verlag
- **General Co-Chair**, 2017 *IEEE International Conference on Computer Vision*, Venice, Italy, October 2017
- **General Co-Chair**, 2016 *IAPR International Conference on Pattern Recognition*, Cancun, Mexico, December 2016
- **General Co-Chair**, 2015 *IEEE Winter Conference on Applications of Computer Vision*, Waikoloa, Hawaii, January 2015
- **General co-Chair**, 4th International Workshop on Computer Vision, Alghero, Italy, May 2014
- **General co-Chair**, 2nd International Workshop on Intelligent Mobile Vision, San Jose, CA July 2013
- **General Co-Chairman**, 2013 *IEEE Conference on Computer Vision and Pattern Recognition*, Portland, OR, June 2013
- **General co-Chair**, 3rd International Workshop on Computer Vision, Siracusa, Italy, May 2012
- **General Co-Chairman**, IEEE Workshop on Applications of Computer Vision, Kona, Hawaii, January 2011
- **General co-Chair**, 2nd International Workshop on Computer Vision, Vietri sul Mare, Italy, May 2010

- **Program Co-Chairman**, IEEE Workshop on Applications of Computer Vision, Snowbird, Utah, December 2009
- **General co-Chair**, International Workshop on Computer Vision, Venice, Italy, May27-29, 2008
- **General Co-Chairman**, IEEE Computer Vision and Pattern Recognition 2007, Minneapolis, MN, June 2007
- **Program Committee** member of IEEE Workshop on Motion and Video Computing, Breckenridge, Colorado, January 2005
- **Co-Chairman of IEEE** Workshop on Perceptual Organization in Computer Vision, Washington, June 2004
- **General Co-Chairman** of the 2001 *IEEE Conference on Computer Vision and Pattern Recognition*, Hawaii, December 2001.
- **Program Co-Chairman** of the 1998 *IAPR Conference on Pattern Recognition*, Melbourne, Australia, August 1998.
- **General Co-Chairman** and Finance Chair of the 1997 *IEEE Conference on Computer Vision and Pattern Recognition*, San Juan, Puerto Rico, June 1997.
- **Program Co-Chairman** of the 1995 *IEEE Symposium on Computer Vision*, Coral Gables, Florida, November 1995.
- **Program Co-Chairman** of the 1991 *IEEE Conference on Computer Vision and Pattern Recognition*, Maui, Hawaii, June 1991.

AWARDS:

- **USC Mellon Mentoring Award** April 2013
- **Fellow** of the *Institute of Electrical and Electronics Engineers*
- **Fellow** of the *International Association for Pattern Recognition*
- **Fellow** of the *Association for the Advancement of Artificial Intelligence*
- **Okawa Foundation Award** for Understanding of Information in Images – 1998
- **Outstanding Teaching Award** USC – School of Engineering– 1994-1995
- **Best Student paper award** to M. Nicolescu and G. Medioni for "4-D Voting for Matching, Densification and Segmentation into Motion Layers" in the Proceedings of the International Conference on Pattern Recognition, vol. 3, pp. 303-308, Quebec City, Canada, August 2002
- **Outstanding Paper (honorable mention) Award** by IEEE Computer Society to G. Medioni, J.S. Chen and A. Huertas for "Very Fast Convolution with Laplacian-of-Gaussian Masks" in the Proceedings of the Computer Vision and Pattern Recognition Conference, pp. 293-298, Miami, Florida, June 1986

BOOKS:

- **Multimedia Systems: Algorithms, Standards, and Industry Practices**
Parag Havaladar, Gerard Medioni
Publisher: Cengage Learning, Inc., July 2009. ISBN10: 1418835943
- **Tensor Voting**
Gérard G. Medioni, Phillipos Mordohai
Publisher: Morgan & Claypool Publishers, November 2006. ISBN: 1598291009
- **Emerging Topics in Computer Vision**
Gérard Medioni and Sing Bing Kang
Publisher: Prentice Hall PTR, July 2004. ISBN: 0-13-101366-1
- **A Computational Framework for Segmentation and Grouping**
Gérard Medioni, Mi-Suen Lee, and Chi-Keung Tang
Elsevier Publisher, February 2000. ISBN: 0-444-50353-6
- **Synthesis Lectures on Computer Vision**
Gérard Medioni, Sven Dickinson
Morgan & Claypool Publisher, ISSNs: 2153-1056

- Lectures available online:

Vision Based Interaction

Matthew Turk and Gang Hua
U of California, Santa Barbara, and IBM Research
2013

Camera Networks: The Acquisition and Analysis of Videos over Wide Areas

Amit K. Roy-Chowdhury and Bi Song
2012

Vision and Language Integration

Kobus Barnard
2011

Deformable Surface 3D Reconstruction from Monocular Images

Mathieu Salzmann, Pascal Fua
2010

Boosting-Based Face Detection and Adaptation

Cha Zhang, Zhengyou Zhang
2010

Image-Based Modeling of Plants and Trees

Sing Bing Kang, Long Quan
2009

- Lectures under development

Activity Understanding

Larry Davis and Abhinav Gupta
University of Maryland

Advanced Methods for Face-Based Biometrics

Massimo Tistarelli
University of Sassari, Italy

Articulated Model Fitting

Michael J. Black
Brown University

Belief Propagation

Yair Weiss and William T. Freeman
Hebrew University and MIT

Component Analysis

Fernando de la Torre
Carnegie Mellon University

Computational Video: Computer Vision for Analysis and Synthesis of Video

Irfan Essa
Georgia Tech

Computer Vision on GPUs

Jan-Michael Frahm and P.J. Narayanan
UNC Chapel Hill and International Institute of Information Technology, Hyderabad

Inference in Large-Scale Graphical Models

Frank Dellaert
Georgia Tech

Optimization in Computer Vision

Yuri Boykov, Andrew Delong, Olga Veksler, Vladimir Kolmogorov
University of Western Ontario and University College London (Kolmogorov)

Pedestrian Detection and Tracking

Ramakant Nevatia
University of Southern California

Shape Priors

Daniel Cremers
Technical University Munich

Spectral Methods for Computer Vision

Jianbo Shi
University of Pennsylvania

The Variational Approach to Image Analysis

Alfred M. (Freddy) Bruckstein
Technion, Israel

Vision-Based Control, Control-Based Vision, and the Information Knot that Ties Them

Stefano Soatto
University of California, Los Angeles

Vision-Based Navigation

Gregory Dudek
McGill University

BOOK CHAPTERS:

- **G. Medioni, "Generic Object Recognition by Inference of 3D Volumetric shape"**
In Sven Dickinson (Ed.): Object Recognition by Humans and Computers. Boston, MA:
Cambridge University Press, 2009
- **G. Medioni and P. Mordohai, "Saliency in Computer Vision",**
In Neurobiology of attention
Edited by L. Itti, G. Rees, and J. Tsotsos, Elsevier Science, 2005
- **G. Medioni, P. Mordohai, and M. Nicolescu, "The Tensor Voting Framework",**
In Handbook of Geometric Computing : Applications in Pattern Recognition,
Edited by Computer Vision, E. Bayro-Corrochano, Neurocomputing, and Robotics,
Springer-Verlag, 2005
- **G. Medioni and P. Mordohai, "The Tensor Voting Framework",**
Emerging Topics in Computer Vision,
Edited by S.B. Kang and G. Medioni , Prentice Hall, 2004
- **G. Medioni and P. Mordohai, "Saliency in Computer Vision",**
Neurobiology of Attention,
Edited by L. Itti, G. Rees, and J. Tsotsos , Elsevier Science, 2004
- **C.K. Tang and G. Medioni, "Tensor Voting and Visual Segmentation",**
The Handbook of Brain Theory and Neural Networks: The Second Edition
Edited by Michael A. Arbib, 2003
- **G. Medioni, P. Mordohai and M. Nicolescu, "The Tensor Voting Framework",**
Handbook of Computational Geometry for Pattern Recognition,
Computer Vision, Neurocomputing and Robotics,
Edited by Eduardo Bayro-Corrochano, Springer-Verlag ,2003.

JOURNAL PAPERS:

- Zhihong Hu, Gerard Medioni, Matthias Hernandez, and SriniVas Sadda, "Automated segmentation of geographic atrophy in fundus autofluorescence images using supervised pixel classification", *Journal of Medical Imaging* 2(1), 014501 (Jan-Mar 2015)
- Thang Ba Dinh, Qian Yu, and Gerard Medioni, "Co-trained Generative and Discriminative Trackers with Cascade Particle Filter" *Computer Vision and Image Understanding*, Volume 119, February 2014, Pages 41–56.
doi:10.1016/j.cviu.2013.11.003
- Matthias Hernandez, Jongmoo Choi, and Gerard Medioni, Near Laser-Scan Quality 3-D Face Reconstruction from a Low-Quality Depth Stream, *Image and Vision Computing*, 2014. (Accepted)
- Cyrus Shahabi, SeonHo Kim, Luciano Nocera, George Constantinou, Ying Lu, Yinghao Cai, Gerard Medioni, Ram Nevatia and Farnoush Kashani, Janus - Multi Source Event Detection and Collection System for Effective Surveillance of Criminal Activity, *Journal of Information Processing Systems*, Vol 10, No 1, 2014.
- Andrew Feng, Ari Shapiro, Wang Ruizhe, Mark Bolas, Gerard Medioni, Rapid avatar capture and simulation using commodity depth sensors, *ACM SIGGRAPH 2014*
- Medioni, G., Choi, J., Labeau, M., Leksut, J. T. and Meng, L. "3D Facial Landmark Tracking and Facial Expression Recognition," *Journal of information and communication convergence engineering* (11:3), 2013, pp. 207--215.
- Anustup Choudhury Gérard Medioni, "Hierarchy of Non-Local Means for Preferred Automatic Sharpness Enhancement and Tone Mapping", *JOSA-A*, Vol. 30, No. 3, March 2013, pp. 353-366.
- Anustup Choudhury Gérard Medioni, "A framework for robust online video contrast enhancement using modularity optimization", in *IEEE Cir. Sys, Video Tech*, September 2012, pp. 1266-1279
- Wu, T., Yeung, S., Jia, J., Tang, C.-K., Medioni, G. G. "A Closed-Form Solution to Tensor Voting: Theory and Applications", *IEEE Transactions on Pattern Analysis and Machine Intelligence(PAMI)*, Volume 34, No. 8, August 2012, pp. 1482-1495.
- G. Medioni, E-Y. Kim, "Urban Scene Understanding from aerial and ground LIDAR data", *International Journal of Machine Vision and Applications*, Vol. 22, No. 4, pp. 691-703, 2011
- G. Medioni, Y. Lin, Q. Yu, "Efficient detection and tracking of moving objects in geo-coordinates", *International Journal of Machine Vision and Applications*, Vol. 22, No. 3, pp. 505-520, 2011
- G. Medioni, J. H. Park, G. S. Lee, Text Image Restoration using Adaptive Fuzzy Median Based on 3D Tensors and Iterative Voting, *Journal of Information Science and Engineering*, Vol. 26, No. 3, pp.1029-1048, 2010
- G. Medioni, Choudhury, A., Perceptually Motivated Automatic Color Contrast Enhancement Based on Color Constancy Estimation. *EURASIP Journal on Image and Video Processing*, 22 pages, 2010
- G. Medioni, Liao, W.-L., Fidaleo D., Robust, Real-Time 3D Face Tracking from a Monocular View. *EURASIP Journal on Image and Video Processing*, 15 pages, 2010
- G. Medioni, Reyes-Lozano, L., Bayro-Carrochano, E.,Registration of 2D Points Using Geometric Algebra and Tensor Voting. *JOURNAL OF MATHEMATICAL IMAGING AND VISION*, 37(3), pp. 249-266, 2010
- G. Medioni, Philippos Mordohai, Dimensionality Estimation, Manifold Learning and Function Approximation using Tensor Voting, *Journal of Machine Learning Research* 11, January 2010, pp. 1-40

- G. Medioni, Qian Yu, Multiple-Target Tracking by Spatiotemporal Monte Carlo Markov Chain Data Association, IEEE-PAMI Vol. 31, No. 12, December 2009, pp. 2196-2210.
- G. Medioni, Jongmoo Choi, Cheng-Hao Kuo, and Douglas Fidaleo, "Identifying Noncooperative Subjects at a Distance Using Face Images and Inferred Three-Dimensional Face Models", SMC-A Vol. 39, No. 1, January 2009, pp. 12-24.
- G. Medioni, Tae Eun Choe, Isaac Cohen, Alexander Walsh and Srinivas Sada, 2-D Registration and 3-D Shape Reconstruction of the Retinal Fundus from Fluorescein Images, Journal of Medical Image Analysis, pp.174-190 Apr. 2008
- G. Medioni, Changki Min, Inferring Segmented Dense Motion Layers Using 5D Tensor Voting, PAMI Vol. 30, No. 9, September 2008, pp. 1589-1602.
- G. Medioni, Leo Reyes, Eduardo Bayro-Corrochano, " Registration of 3D points using geometric algebra and tensor voting" IJCV 2007
- G. Medioni, Chang Yuan, Jinman Kang, and Isaac Cohen, "Detecting Motion Regions in Presence of Strong Parallax from a Moving Camera by Multi-view Geometric Constraints", IEEE Transactions on Pattern Analysis and Machine Intelligence(PAMI), vol. 29, no. 9, pp. 1627-1641, September 2007
- G. Medioni, Alexandre R.J. François, Matheen Siddiqui, Kwangsu Kim and Hosub Yoon, "Robust Real-Time Vision for a Personal Service Robot", Computer Vision and Image Understanding, special issue on Human-Computer Interaction, vol. 108, Issue 1-2, pp. 196-203, October 2007
- G. Medioni, Philippos Mordohai, "Stereo Using Monocular Cues within the Tensor Voting Framework," IEEE Transactions on Pattern Analysis and Machine Intelligence, vol. 28, no. 6, pp. 968-982, Jun., 2006
- G. Medioni, C. Pan, H. Yan, S. Ma, "Parametric Reconstruction of Generalized Cylinders from Limb Edges", IEEE Transactions on Image Processing, Aug 2005, Vol 14, number 5, pp. 1202-1214
- G. Medioni, Nicolescu M, "A voting-based computational framework for visual motion analysis and interpretation." IEEE Trans Pattern Anal Mach Intell. 2005 May;27(5):739-752
- G. Medioni, C.K. Tang, P. Mordohai and W.S. Tong, "First Order Augmentations to Tensor Voting for Boundary Inference and Multiscale Analysis in 3-D", in IEEE Transactions on Pattern Analysis and Machine Intelligence, Volume: 26, Issue: 5, pp. 594-611 May 2004
- G. Medioni, M. Nicolescu, "Perceptual Grouping from Motion Cues - A 4-D Voting Approach", IEEE Transactions on Pattern Analysis and Machine Intelligence, Special Issue on Perceptual Organization in Computer Vision, vol. 25, no. 4, pp. 492-501, April 2003
- G. Medioni, E. Kang, I. Cohen, "Graph-based Global Registration of Dynamic Scenes", Pattern Recognition Letters, Elsevier Science.
- G. Medioni, A. François, R. Waupotitsch, "Mirror Symmetry => 2-View Stereo Geometry", International Journal of Computer Vision and Image Understanding, vol. 21, no. 2, pp. 137-143, February 2003
- G. Medioni, M.S. Lee, P. Mordohai, "Inference of Segmented Overlapping Surfaces from Binocular Stereo", IEEE Transactions on Pattern Analysis and Machine Intelligence, vol. 24, no. 6, pp. 824-837, June 2002
- G. Medioni, C.K. Tang, "A Curvature-Augmented Tensorial Framework for Shape Inference from Noisy, 3-D Data", IEEE Transactions on Pattern Analysis and Machine Intelligence, vol. 24, no. 3, pp. 858-864, March 2002
- G. Medioni, G. Chen, "Practical algorithms for stratified structure-from-motion", International Journal of Computer Vision and Image Understanding, vol. 20, no. 2, pp. 103-123, February 2002

- G. Medioni, B. Leroy, E. Johnson and L. Matthies, "Crater Detection for Autonomous Landing on Asteroids", International Journal of Computer Vision and Image Understanding, vol. 19, no. 11, pp. 787-792, September 2001
- G. Medioni, I. Cohen, F. Bremond, S. Hongeng and R. Nevatia, "Event detection and analysis from video streams", IEEE Transactions on Pattern Analysis and Machine Intelligence, vol. 23, no. 8, pp. 873-889, August 2001
- G. Medioni, C.K. Tang, and M.S. Lee, "N-Dimensional Tensor Voting, Application to Epipolar Geometry Estimation", IEEE Transaction on Pattern Analysis and Machine Intelligence, vol. 23, no. 8, pp. 829-844, August 2001
- G. Medioni, A. François, "Interactive 3-D Model Extraction From a Single Image", International Journal of Computer Vision and Image Understanding, vol. 19, no. 6, pp. 317-328, April 2001
- G. Medioni, G. Chen, "Building Human Face Models from Two Images", Journal of VLSI Signal Processing, Kluwer Academic Publishers, vol. 27, no. 1/2, pp. 127-140, January 2001
- G. Medioni, M.S. Lee, "Grouping ., -, ->, O-, into Regions, Curves and Junctions", International Journal of Computer Vision and Image Understanding, vol. 76, no. 1, pp.54-69, October 1999
- G. Medioni and C. Liao, "Surface Approximation and Segmentation of Complex Objects", International Journal of Computer Vision and Image Understanding, vol. 73, no. 1, pp. 43-63, January 1999
- G. Medioni and C.K. Tang, "Inference of Integrated Surface, Curve, and Junction Descriptions from Sparse 3-D Data", IEEE Transactions on Pattern Analysis and Machine Intelligence, vol. 20, no. 11, pp. 1206-1223, November 1998
- G. Medioni and P. Havaladar, "Full Volumetric Descriptions from Three Intensity Images", IEEE Transactions on Pattern Analysis and Machine Intelligence, vol. 20, no. 5, pp. 540-545, May 1998
- G. Medioni and G. Guy, "Inference of Surfaces, Curves and Junctions from Sparse, Noisy 3-D Data", IEEE Transactions on Pattern Analysis and Machine Intelligence, vol. 19, no. 11, pp. 1265-1277, November 1997
- G. Medioni, M.S. Lee, P. Havaladar, "View Synthesis from Unregistered Images", Computer Graphics Forum, vol. 16, no. 1, pp. 65-73, March 1997
- G. Medioni and R. Nevatia, "Computer Vision Research at the University of Southern California", International Journal of Computer Vision and Image Understanding, vol. 20, no. 1/2, pp. 5-10, 1996
- G. Medioni and B. Parvin, "B-Rep Description from MultipleRange Images", International Journal of Computer Vision and Image Understanding, vol. 20, no. 1/2, pp. 81-112, 1996
- G. Medioni, P. Havaladar, F. Stein, "Perceptual Grouping for Generic Recognition", International Journal of Computer Vision and Image Understanding, vol. 20, no. 1/2, pp. 59-80, 1996
- G. Medioni, G. Gideon, "Inferring Global Perceptual Contours from Local Features", International Journal of Computer Vision and Image Understanding, vol. 20, no. 1/2, pp. 113-133, 1996
- G. Medioni, F. Stein, "Map Based Localization Using the Panoramic Horizon", IEEE Journal of Robotics, vol. 11, no. 6, pp. 892-896, December 1995

- G. Medioni and F. Ennesser, "Finding Waldo, or Focus of Attention Using Local Color Information", IEEE Transactions on Pattern Analysis and Machine Intelligence, vol. 17, no. 8, pp. 805-809, August 1995
- G. Medioni and Y. Chen, "Description of Complex Objects from Multiple Range Images Using an Inflating Balloon Model", International Journal of Computer Vision and Image Understanding, vol. 61, no. 3, pp. 325-334, May 1995
- G. Medioni, C.W. Liao, "Surface Approximation of a Cloud of 3D Points", Graphical Models and Image Processing, vol. 1, no. 1, pp. 67-74, January 1995
- G. Medioni, H. Rom, P. Saint-Marc, "B-spline contour representation and symmetry detection", IEEE Transactions on Pattern Analysis and Machine Intelligence, vol. 15, no. 11, pp. 1191-1197, November 1993
- G. Medioni, H. Rom, "Hierarchical decomposition and axial shape description", IEEE Transactions on Pattern Analysis and Machine Intelligence, vol. 15, no. 10, pp. 973-981, October 1993
- G. Medioni, F. Stein, "Structural Indexing: Efficient 2-D Object Recognition", IEEE Transactions on Pattern Analysis and Machine Intelligence, vol. 14, no. 12, pp. 1198-1204, December 1992
- G. Medioni and S. Cochran, "3-D Surface Description from Binocular Stereo", IEEE Transactions on Pattern Analysis and Machine Intelligence, vol. 14, no. 10, pp. 981-994, October 1992
- G. Medioni and K. Rao, "Generalized Cones: Useful Geometric Properties", Computer Vision, Graphics and Image Processing, vol.10, no. 3, pp. 185-208, October 1992
- G. Medioni, Y. Chen, "Object Modelling by Registration of Multiple Range Images", International Journal of Computer Vision and Image Understanding, vol. 10, no. 3, pp. 145-155, April 1992
- G. Medioni and F. Stein, "Structural Indexing: Efficient Three Dimensional Object Recognition", IEEE Transactions on Pattern Analysis and Machine Intelligence, vol. 14, no. 2, pp. 125- 145, February 1992
- G. Medioni, P. Saint-Marc and J.S. Chen, "Adaptive Smoothing: A General Tool for Early Vision", IEEE Transactions on Pattern Analysis and Machine Intelligence, vol. 13, no. 6, pp. 514-529, June 1991
- G. Medioni, P. Saint-Marc and J.L. Jezouin, "A Versatile PC-Based Range Finding System", IEEE Transactions on Pattern Analysis and Machine Intelligence, vol. 7, no. 2, pp. 250-256, April 1991
- G. Medioni, M. Wilson and A. Heurtas, "Automatic Registration of Color Separation Films", International Journal of Machine Vision and Applications, vol. 4, no. 5, pp. 33-51, March 1991
- G. Medioni and F. Ulupinar, "Refining Edges Detected by a LoG Operator", Computer Vision, Graphics and Image Processing, vol. 51, pp. 275-298, September 1990
- G. Medioni, J.S. Chen and A. Huertas, "Authors' reply to comments on Fast Convolution with Laplacian-of-Gaussian Masks", IEEE Transactions on Pattern Analysis and Machine Intelligence, vol. 11, no. 12, pp. 1329-1332, December 1989
- G. Medioni, T.J. Fan and R. Nevatia, "Recognizing 3-D Objects Using Surface Descriptions", IEEE Transactions on Pattern Analysis and Machine Intelligence, vol. 2, no. 11, pp. 1140-1157, November 1989
- G. Medioni, K. Rao, H. Liu and G. Bekey, "Robot Hand-Eye Coordination Shape Description and Grasping", IEEE Control Magazine, vol. 9, no. 2, pp. 22-29, February 1989

- G. Medioni and B. Parvin, "Adaptive Multiscale Feature Extraction From Range Data", Computer vision, Graphics and Image Processing, vol. 45, no. 3, pp. 346-356, March 1989
- G. Medioni, R. Mohan and R. Nevatia, "Stereo Error Detection, Correction and Evaluation", IEEE Transactions on Pattern Analysis and Machine Intelligence, vol. 11, no.2, pp. 113-120, February 1989
- G. Medioni and J.S. Chen, "Detection, Localization and Estimation of Edges", IEEE Transactions on Pattern Analysis and Machine Intelligence, vol. 11 , no. 2, pp. 191-198, February 1989
- G. Medioni, T.J. Fan and R. Nevatia, "Segmented Descriptions of 3-D Surfaces", IEEE Journal of Robotics and Automation, vol. RA-3, no. 6, pp. 527-538, December 1987
- G. Medioni and Y. Yasumoto, "Corner Detection and Curve Representation Using Cubic B-Splines", Computer Vision, Graphics and Image Processing, vol. 39, no. 3, pp. 267-278, September 1987
- G. Medioni, J.S. Chen and A. Huertas, "Fast Convolution with Laplacian-of-Gaussian Masks", IEEE Transactions on Pattern Analysis and Machine Intelligence, vol. 9, no. 4, pp. 584-590, July 1987
- G. Medioni and A. Huertas, "Detection of Intensity Changes with Subpixel Accuracy Using Laplacian Gaussian Masks", IEEE Transactions on Pattern Analysis and Machine Intelligence, vol. 8, no. 5, pp. 651-664, September 1986
- G. Medioni and Y. Yasumoto, "Robust Estimation of 3-D Motion Parameters from a Sequence of Images Using Regularization", IEEE Transactions on Pattern Analysis and Machine Intelligence, vol. 8, no. 4, pp. 464-471, July 1986
- G. Medioni and R. Nevatia, "Segment-Based Stereo Matching", Computer Vision, Graphics and Image Processing, vol. 31, no.3, pp. 2-18, July 1985
- G. Medioni and R. Nevatia, "Matching Images Using Linear Features", IEEE Transactions on Pattern Analysis and Machine Intelligence, vol. 6, no. 6, pp. 675-685, November 1984
- G. Medioni, P. Kaufmann and R. Nevatia, "Visual Inspection Using Linear Features", Pattern Recognition Letters, vol. 17, no. 5, pp. 485-491, April 1984

CONFERENCE PAPERS:

Invited:

- G. Medioni and A. François, "3-D Structures for Generic Object Recognition", Proceedings of the International Conference on Pattern Recognition, vol. 1, pp. 30-37, Barcelona, Spain, September 2000
- G. Medioni, "Making Faces: 3-D Model, Animation, Evaluation", International Workshop on Articulated Models and Deformable Objects, Palma de Mallorca, Spain, September 2000
- G. Medioni and C.K. Tang, "Tensor Voting: Theory and Applications", Proceedings of RFIA 2000, Paris, France, February 2000.
- M.S. Lee and G. Medioni, "Inferred Descriptions in Terms of Curves, Regions, and Junctions from Sparse, Noisy Binary Data", Proceedings of International Workshop on Visual Form, pp. 350-367, Capri, Italy, May 1997

- G. Medioni, "Using Computer Vision in Real Applications: Two Success Stories", International Association of Pattern Recognition Workshop on Application of Computer Vision, Tokyo, Japan, November 1996
- M. Zerroug, G. Medioni and R. Nevatia, "Generic Object Recognition and QuasiInvariance", Proceedings of Europe-China Workshop on Geometric Modeling and Invariants for Computer Vision, pp. 276-285, Xi'an, China, April 1995
- M. Zerroug and G. Medioni, "The Challenge of Generic Object Recognition", Proceedings Of ARPA-NSF workshop on Object Representation, New York, December 1994

Refereed:

- Matthias Hernandez, Gerard Medioni, Zhihong Hu Srinivas Satta, Multimodal registration of multiple retinal images based on line structures, IEEE Winter Conference on Applications of Computer Vision (WACV), 2015.
- Zhuoliang Kang, Gerard Medioni. 3D Urban Reconstruction from Wide Area Aerial Surveillance Video. Workshop on Applications for Aerial Video Exploitation (WAVE), 2015.
- Zhuoliang Kang, Gerard Medioni. Progressive 3D Model Acquisition with a Commodity Hand-held Camera. Winter Conference on Applications of Computer Vision (WACV), 2015.
- Bor-Jeng Chen, Gerard Medioni, 3-D Mediated Detection and Tracking in Wide Area Aerial Surveillance, Winter Conference on Applications of Computer Vision (WACV), 2015.
- Richard Wang, Jongmoo Choi, Gerard Medioni, 3D Modeling from Wide Baseline Range Scans using Contour Coherence, CVPR 14 (IEEE Conference on Computer Vision and Pattern Recognition), 2014.
- Jongmoo Choi, Anh Tran Tuan, Yann Dumortier and Gerard Medioni, Real-Time 3-D Face Tracking and Modeling Framework for Mid-Res Cam, IEEE Winter Conference on Applications of Computer Vision (WACV), 2014.
- Jongmoo Choi, Gerard Medioni, Learning Symbolic Descriptions of Activities from Examples in WAAS, 22nd ACM SIGSPATIAL International Conference on Advances in Geographic Information Systems (ACM SIGSPATIAL 2014), November 4-7, Dallas, Texas, USA, 2014.
- Matthias Hernandez, Jongmoo Choi, and Gerard Medioni, Near Laser-Scan Quality 3-D Face Reconstruction from a Low-Quality Depth Stream, Image and Vision Computing, 2014. (Accepted)

- Loc Huynh, Jongmoo Choi, Gerard Medioni, Aerial 3D Video Stabilization using Epipolar Geometry Constraint, 22nd International Conference on Pattern Recognition (ICPR), Stockholm, Sweden, 2014.
- Young Hoon Lee, Gerard Medioni, Wearable RGBD indoor navigation system for the blind, ECCV2014 workshop on Assistive Computer Vision and Robotics (ACVR), 2014
- I. Masi, C. Ferrari, A. Del Bimbo, and G. Medioni, Pose Independent, Face Recognition by Localizing Local Binary Patterns via Deformation Components, 22nd International Conference on Pattern Recognition (ICPR), Stockholm, Sweden, 2014.
- Ari Shapiro, Andrew Feng, Ruizhe Wang, Hao Li, Mark Bolas, Gérard G. Medioni, and Evan Suma. "Rapid avatar capture and simulation using commodity depth sensors." Computer Animation and Virtual Worlds, 2014
- Ari Shapiro, Andrew Feng, Ruizhe Wang, Gérard G. Medioni, Mark T. Bolas, and Evan A. Suma. "Automatic acquisition and animation of virtual avatars." In Virtual Reality, 2014.
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RECENT INVITED TALKS:

- **Robot Vision for the Visually Impaired**
Invited lecture, INRIA Paris, December 17, 2010
- **Tensor Voting: Overview and Applications**
Keynote lecture, 23rd SIBGRAPI – Conference on Graphics, Patterns and Images, August 31th, 2010 Gramado, Rio Grande do Sul, Brazil
- **"Tensor Voting: Review and New Elements"**
Invited Lecture, Seventh IEEE Computer Society Workshop on Perceptual Organization in Computer Vision (POCV), San Francisco, California, June 13, 2010. In Conjunction with IEEE CVPR 2010
- **"Detection and Tracking of Moving Objects from a Moving Platform"**
IDC Herzliya, IL, Feb 21, 2008
- **"Detection and Tracking of Moving Objects from a Moving Platform"**
Rafael Advance Defense Systems, Israel, Feb 24, 2008
- **"Detection and Tracking of Moving Objects from a Moving Platform"**
Distinguished lecture, UC Riverside, March 10 2008
- **"Tensor Voting and applications"**
Center for Applied Mathematics, USC, March 24, 2008

- **"Tensor Voting in 2 to N dimensions: Fundamental Elements and a Few Applications"** -Distinguished Lecture, BrownUniversity, Sptember 15, 2008
- **Keynote speaker - ISVC-08**, Las Vegas, Nevada, November 2008
- **"Facial Gesture Analysis in an Interactive Environment"**
IDC Herzliya, Israel, as part of Israel Computer Vision day 2008
- **Keynote speaker - Automated Imaging Association (AIA) Business Conference**
in San Diego (Coronado), Feb 4-6, 2009
- **Keynote speaker - 2009 World Congress on Computer Science and Information Engineering (CSIE 2009)**, March 31 - April 2, 2009, Los Angeles/Anaheim, USA
- **"Spatio-temporal Probabilistic Inference for Persistent Object Detection and Tracking",**
Hebrew University of Jerusalem, Israel, November 25, 2007
- **"Computer Vision in the Real World: a bright future",**
Inter Disciplinary Center, Herzliya, Israel, November 14, 2007
- **"Cooperation model of Multi-sensor Nodes for a Personal Service Robot",**
IROS 2007 Workshop on Ubiquitous Robotic Space Design and Applications, San Diego, CA, November 2, 2007
- **"Vision for a Personal Service Robot",**
Microsoft Research Asia, Beijing, China, May 23, 2007
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USC Institute for Creative Technologies, Marina del Rey, California, April 30, 2007
- **"Vision System for a Personal Service Robot",**
ETRI, Daeyoung, Korea, Dec 14 2005
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- **"Overview of Research in Video Image Analysis at USC-IRIS",**
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Technion, Haifa, Israel, Feb 22 2005
- **"Tensor Voting Model of Motion Measurement"**
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- **"A Voting-Based Computational Framework for Visual Motion Analysis and Interpretation"**
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" Method and apparatus for registering color film separations", awarded June 1991.
- **U.S. Patent # 4,849,914** (Principal Inventor)
" Method and apparatus for registering color separation films", awarded July 1989.

other patents pending