

Stefano Soatto

CURRICULUM VITÆ

November 2005

PERSONAL AND CONTACT INFORMATION

Born in Padova - Italy, on March 19th, 1968. Citizen of Italy, Permanent Resident of the United States.
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RESEARCH AND TEACHING INTERESTS

Shape representation, modeling and estimation; motion estimation and control; target tracking; image registration; texture modeling and recognition; visual accommodation; visual insertion; human-machine interfaces; image-based modeling and rendering; detection and estimation theory; statistical learning theory; system identification theory; nonlinear filtering; nonlinear control; autonomous navigation; assisted surgery; medical imaging; statistical inference on manifolds; Monte carlo filtering; statistical dimensionality reduction; image processing; image coding; image compression; human visual perception; visual psychophysics; hybrid system identification; computational biology; computational aesthetics.

PROFESSIONAL EXPERIENCE

University of California, Los Angeles - CA

Professor of Computer Science (05–present)
Associate Professor of Computer Science (02–05)
Assistant Professor of Computer Science (00–02)

Washington University, St. Louis - MO

Adjunct Associate Professor of Electrical Engineering (02–03)
Associate Professor of Electrical Engineering (00–01, on leave)
Associate Professor of Biomedical Engineering (00–01, on leave)
Assistant Professor of Biomedical Engineering (99–00)
Assistant Professor of Electrical Engineering (97–00)

California Institute of Technology, Pasadena - CA

Visiting Associate in Control and Dynamical Systems, (02–present)
Postdoctoral Research Associate (96)

Harvard University, Cambridge - MA

Postdoctoral Research Associate (96–97)

Università degli Studi di Udine, Udine - Italy

Ricercatore (Assistant Professor) of Mathematics and Computer Science (95–98, on leave)

EDUCATION

California Institute of Technology, Pasadena - CA

Ph.D. in Control and Dynamical Systems (6/93–6/96)
Thesis: “A Geometric Framework for Dynamic Vision”

Committee: John Doyle, Christof Koch, Jerrold Marsden, Richard Murray, Pietro Perona (Chair)
M.S. in Electrical Engineering (9/92-6/93) G.P.A. 4.0/4.0

Università degli studi di Padova, Padova - Italy

Laurea in Ingegneria Elettronica (highest honors) (9/87-7/92)

Thesis: “Stima della struttura di una scena e del moto dell’osservatore mediante il filtro di Kalman”
G.P.A. 110/110 e Lode, advisor G. Picci.

University of California, Berkeley - CA

E.A.P. Fellow (Visiting Student in Electrical Engineering and Computer Science) (8/90-6/91)

Liceo Ginnasio Tito Livio, Padova - Italy

Maturità Classica (9/82-7/87)

AWARDS

Best Poster Award IEEE Intl. Conf. on Comp. Vis. and Patt. Recogn., 2004 (with P. Favaro).

Outstanding Reviewer Appreciation IEEE Transactions on Automatic Control, 2002.

Okawa Foundation Research Award in Telecommunications, 2001.

David Marr Prize (with Y. Ma, J. Kosecka and S. Sastry of U.C. Berkeley), 1999. Highest honor bestowed in the field of Computer Vision. Awarded bi-annually by the IEEE Computer Society. Sponsored by IEEE and Microsoft. Presented at the Intl. Conf. on Computer Vision (ICCV), Kerkyra - Greece, September 1999, for work on “Euclidean reconstruction and reprojection up to subgroups”.

Outstanding Paper Award (with R. Brockett of Harvard), 1998. Awarded annually by the IEEE Computer Society, PAMI Technical Committee. Sponsored by IEEE and Siemens. Presented at the IEEE Intl. Conf. on Computer Vision and Pattern Recognition (CVPR), Santa Barbara - CA, June 1998, for work on “Optimal structure from motion: local ambiguities and global estimates”.

National Science Foundation CAREER Award for research on “Controllable Visual Cues”, CISE Directorate, 1998.

Fondazione Gini *A. Gini fellowship*, 1992-93 and 1994-95.

Università di Padova *Research Abroad Fellowship in Mathematics* 1993-94.

PROFESSIONAL SERVICES AND EDITORIAL ACTIVITIES

Conference Program Committee and Chairmanship

- NIPS 2005
- Intl. Conf. on Scale-Space and PDE Methods, Hofgeismar - Germany, Program Committee, April 2005
- IEEE Workshop on Motion and Video Computing, Program Co-Chair, January 2005.
- IEEE Intl. Conf. on Computer Vision and Pattern Recognition (CVPR):
 - Program Committee 1999 (Fort Collins),
 - Program Committee 2000 (Hilton Head),
 - Program Committee 2001 (Kauai),
 - (no conference in 2002 due to ICCV being in North America),
 - Demo Chair 2003 (Madison),
 - Area Chair 2004 (Washington),
 - Program Co-Chair 2005 (San Diego).
- 3DPVT 2004, Program Committee, Thessaloniki, Greece.

- Workshop on Nonrigid and Articulated Motions , Program committee, 2004 (Washington - DC).
- European Conference on Computer Vision (ECCV; bi-annual):
 - Area Chair 2002 (Kopenhagen),
 - Area Chair 2004 (Prague).
 - Area Chair 2005 (Graz) (turned down invitation).
- Intl. Conf. on Computer Vision (ICCV; bi-annual):
 - Program Committee 2003 (Nice).
 - Area Chair, 2005 (Beijing)
- IEEE Conference on Decision and Control: Program Committee 2000 (Sydney).
- Mathematical Theory of Networks and Systems: Program Committee 2000 (Perpignan).
- IEEE Workshop on Video Registration: Program Committee 2001 (Vancouver), Program Committee 2003 (Nice).
- Workshop on Generative Model-based Vision: Program Committee 2002 (Kopenhagen).
- Workshop on dynamic modeling of visual scenes: Program Committee 2002 (Kopenhagen).
- Intl. Conf. on Patt. Recog. (ICPR): Program Committee 2004.
- Workshop on Statistical and Computational Theories of Vision: Program Committee 2003.
- Workshop on Computer Vision for the Nanoscale: Program Committee 2003 (Madison).
- IEEE Workshop on Variational, Geometric and Lagrangian Methods in Computer Vision: Program Committee 2003 (Nice).
- Workshop on Multimodal User Authentication: Program Committee 2003 (Santa Barbara).
- Intl. Symposium of 3D Modeling: Program Committee 2003.
- Workshop on Variational and Level Set Methods (VLSM): Program Committee 2003.

Editorial activity

- IEEE Transactions on Pattern Analysis and Machine Intelligence (PAMI), Associate Editor (2003–present).
- International Journal of Computer Vision, Member of the Editorial Board (2004-2006).
- Member of the Editorial Board, Foundations and Trends in Computer Vision and Graphics, (2003–present).

Referee: journals Science, 2004; Foundations of Computational Mathematics, 2003; Computer Vision and Image Understanding, 2003; Image and Vision Computing (2004) SIAM Journal of Applied Mathematics; Automatica (2/2004), International Conference on Visual Languages and Computing (5/03), IEEE Transactions on Information Theory; IEEE Transactions on Robotics and Automation; IEEE Transactions on Pattern Analysis and Machine Intelligence; IEEE Transactions on Control Systems Technology; Systems and Control Letters; IEEE Transactions on Automatic Control (5/02, 5/03); IEEE Transactions on Image Processing; the International Journal of Computer Vision; Computer Vision, Graphics and Image Processing; Journal of the Optical Society of America A, ACM Computing Survey.

Referee: books SIAM, June 2002; Springer Verlag, Series “Applications of Mathematics”, 1999.

Review panels and review boards , AFOSR/ARL, July 2003, CoRe UC Discovery Grant review board, Organizational Committee for a proposed Center for Computational Science and Engineering, UCLA; JPL Mars Landing “DIMES” review board, 4/10/02, NSF (Division on Computer and Information Sciences, 1999, April 2001, November 2001, June 2002, November 2003); ARO (Mathematics and Computer Science Division, 2000); AFOSR (Mathematics, Dynamics and Control, January 2002); Tenure reviews: R. Manduchi (UC Santa Cruz), M. Pollefeys (K. U. Leuven), J. Kosecka (George Mason University), C. K. Tang (Hong Kong UST).

INVITED PRESENTATIONS

Distinguished lectures University of Wisconsin - Madison, Computational Sciences Distinguished Lecture Series (2003), Stanford University, Broad Area Colloquium Series (2002), Semi-plenary talk, IFAC Symposium on System Identification (Rotterdam), 2003.

Tutorials and mini-courses Tutorial on active vision at CDC 2005, Semi-plenary talk, IFAC SYSID, 2004; Intl. Conf. on Adv. Robotics (ICRA 2003), tutorial on 3-D vision; SIGGRAPH 2003 (San Diego), SIGGRAPH 2004 (Los Angeles): tutorial on 3-D vision; 3rd European Control Conference (ECC '95), the Mathematical Theory of Networks and Systems (MTNS '98), Summer School for Ph.D. candidates in Systems and Controls (Bertinoro - Italy, 1999), International Conference on Robotics and Automation (ICRA '00), "Dynamic System Identification in Computer Vision", Europ. Conf. on Comp. Vision (ECCV, May 27, 2002), UCLA Extension short course on 3D reconstruction, Sept. 2002, "3D reconstruction", 3DPVT, Padova - Italy, June 2002.

Invited Workshops Workshop on Perceptive Social Agents and Robots, UCSD Jan 2003, Stanford Computer Forum, 3/18/2002; NASA AMES Research Center, 3/19/2002; NIH, Department of Health and Human Services, Workshop on "Development of new tools in computational neuroscience", September 2001; NSF/ARO Workshop on *Vision and Control*, Block-Island, May 1997; Microsoft Research Faculty Summit, July 2002.

Institutes Fields Institute for Research in Mathematical Sciences, Toronto – ON, August 2001; Institute for Mathematics and Its Applications, "Mathematics and Multimedia" program, Minneapolis - MN, October-November 2000. IPAM, "Emerging Applications of Inverse Problems Techniques to Imaging Science" (member of the organizing committee).

Department and group seminars University of Pennsylvania, Department Colloquium (2003), University of Wisconsin - Madison, Computational Sciences Distinguished Lecture Series (2003), Stanford University, Broad Area Colloquium Series (2002), University of Illinois at Urbana-Champaign (CSL '01); New York University (Neuroscience '01); University of Maryland (CFAR '01), UCLA (Electrical Engineering '98, Computer Science '99, Cognitive Science '01, Levelset seminar '01); University of Pennsylvania (Computer and Information Science '95, '97); Cambridge University (Engineering Science '95), Arizona State University (Mathematics '95), University of Connecticut (Electrical Engineering '95), Princeton University (Electrical Engineering '95), U.C. Berkeley (Electrical Engineering and Computer Science '97), Scuola Normale Superiore ('93), Harvard University (Applied Sciences '95), MIT (LIDS '95, '99, AI Lab '93), Georgiatech (College of Computing '96), Brown University (Applied Mathematics '97), U.C. Santa Barbara (Electrical and Computer Engineering '97, Mechanical and Environmental Engineering '00), Washington University (System Science and Mathematics '95, Electrical Engineering '97), University of Minnesota (Electrical Engineering '99), Boston University (Computer Science '99), Consiglio Nazionale delle Ricerche ('92), Caltech (Control and Dynamical Systems '96, '00, Electrical Engineering '94).

Industry research seminars Intel (Santa Clara, CA '00), Microsoft Research (Redmond, WA '00), Microsoft Research (Cambridge, U.K. '00), Geometrix INC. (Santa Clara, CA '00), NEC Research (Princeton, NJ '95, '97).

ADVISING

Current Postdocs

- Emmanuel Prados (Ph.D., Ecole Normale Supérieure and INRIA-Sophia, France)
- Fabio Cuzzolin (Ph.D., University of Padova - Italy)
- Chae-Joi Young (Ph.D., Technical University, Korea)
- Byung-Woo Hong (Ph.D., Oxford University, U.K.)

Current Graduate Students

- Alessandro Bissacco (Ph.D., UCLA, fifth year), Unsupervised modeling of visual actions.
- Jason Meltzer (Ph.D., UCLA, fifth year), visual localization and navigation.
- George Scarlatis (M.D./Ph.D. Biomedical Engineering, UCLA), retinal prosthetics (co-advisor)
- Eagle Jones (Ph.D., UCLA, fourth year), active appearance models.
- Andrea Vedaldi (Ph.D., UCLA, third year), visual modeling for recognition.
- Philip Venturelli (M.S., UCLA, second year), currently on leave at Raytheon.
- Dejun Wang (Ph.D., UCLA, second year), variational reconstruction.
- Ben Leong (Ph.D., UCLA, second year), currently on leave at JPL.
- Brian Fulkerson (Ph.D., UCLA, first year), habitat monitoring.
- Kamil Wnuk (Ph.D., UCLA, first year).
- Jeremi Sudol (Ph.D., UCLA, first year).
- Alex Cabal (B.S., UCLA, senior).

Former students and postdocs

- Gianfranco Doretto (M.S./Ph.D., UCLA, 00-05), Dynamic textures, now at GE Global Research, Niskayuna - NY.
- Kerry Connor (B.S., UCLA, 03-04);
- Daniel Cremers (Postdoc 02-04), now Associate Professor at the University of Bonn, Germany.
- Siddharth Manay (Postdoc 03-04), now at Lawrence Livermore National Labs.
- Hailin Hin (Ph.D. 98-04), Now at Adobe Research.
- Paolo Favaro (Ph.D., 99-04), now at Siemens Corporate Research, Princeton – NJ.
- Byung-Woo Hong (Visiting Student, 03-04, Oxford University), now at UCLA.
- Payam Saisan (M.S. EE, 00-04), Facial motion analysis, now at HRL (Hughes Research Labs).
- Esha Datta (Visiting Student, 02, Stanford University).
- Thomas Gazagnaire (Visiting Student, 02, Ecole Normale Superieure, Lyon).
- Nicola Moretto (Ph.D. 2003, EE, University of Padova - Italy; co-advisor).
- Alessandro Duci (Ph.D. 2003, Mathematics, Scuola Normale Superiore, Pisa; co-advisor), now at Intel Research, Santa Clara.
- Federico Guido (Ph.D. 2002, EE, University of Genova - Italy).
- Marco Turetta (D. Ing. 2002, EE, University of Padova - Italy; co-advisor).
- Rene Vidal, (Ph.D 2002, EECS, UC Berkeley; co-advisor in 2001/2002), now Assistant Professor at Johns Hopkins University.
- Francesco Nori (Laurea 2001, CS, Università di Padova; co-advisor).
- Toshiya Ogonuki, (Postdoc 2000, Japan Radio Company).
- Alessandro Chiuso, (Ph.D. 2000, EE, Università di Padova; co-advisee); Now Assistant Professor, Università di Padova, Italy.
- Loris Vicario, (Laurea 2000, CS, Università of Udine; co-advisee).
- Udeepa Bordoloi (M.S. 1999, EE, Washington University).
- Diego Crovato, (Laurea 1996, CS, Università di Udine).
- Jonni Meneghel, (Laurea 1997, CS, Università di Udine).
- Claudio Tomasella, (Laurea 1998, CS, Università di Udine).

FUNDING

NSF “Nets ProWIN” (M. Gerla, PI) \$750,000.

ONR “CVPR AC Workshop” \$10,000.

NSF “CVPR AC Workshop” \$10,000.

Keck Foundation “Infrastructure support for the Vision Collective” (A. Yuille, PI), \$660,000, 1/3/2005.

NSF “US/Europe exchange” (S. Soatto, PI), \$18,270.00, 10/5/04, 100%.

NIH “National Center in Biological Computing” (A. Toga, PI), \$20,000,000, 9/15/04–9/14/09, 10%.

JPL “Fast feature detection” (S. Soatto, co-PI), \$20,000, 2004.

ONR “Modeling spatio-temporal events from video” (S. Soatto, PI), \$280,000 (’03-’06).

AFOSR “MURI”, “Active vision for control of agile manoeuvring aerial vehicles” (E. Johnson, PI; Georgia Tech, UCLA, MIT), \$3,000,000 (’03-’06)

AFOSR “Dynamic Vision” (S. Soatto, PI), \$577,567

NSF “Center for Embedded and Networked Sensing” (D. Estrin, PI).

NSF RHA “A variational framework for reconstructing complex 3D shape and photometry from multiple images”, PI, \$534,748 (02-05).

NSF ECS “Modeling spatiotemporal events from video”, PI, \$100,697 (02-05).

ONR “MURI” (C. Tomlin, PI), \$5,000,000, Co-PI share \$283,623 (02-05).

NSF “Career” (transfer from Washington University), \$111,468.00

Okawa Foundation “The Okawa Fellowship”, \$10,000 (01).

Microsoft “Equipment and software donation”, \$17,640.85.

Intel “Real-time 3D interaction of virtual objects in real environments” (PI) second renewal \$48,000, 5/9/01; third renewal \$55,000, 3/7/02.

UCLA Academic Senate, Council on Research Seed Funding Initiative, “Minimally invasive optical 3D shape sensors” (PI), \$19,787 (01-02).

NIH Pre-NPEBC (A. Toga, PI) (National Center of Excellence in Biomedical Computing), \$500,000, 2.5% (02-05).

DARPA NEST Globally ad-hoc locally regular embedded systems (Co-PI, with D. Estrin, M. Srivastava, M. Sarrafzadeh), \$1,871,424, 25% (01-03).

Army Research Office Defense University Research Instrumentation Program (PI), \$81,841 (01-03).

Intel “Real-time 3D interaction of virtual objects in real environments” (PI) \$56,000, 10/00.

Intel “Academic Contribution” (PI) \$26,047 (10/00).

Intel “Equipment donation” \$4,370 (1/03).

Army Research Office “Vision for control: optimality and usability” (PI) \$210,000, 6/1/99 – 5/31/02.

National Science Foundation CAREER Award: “Controllable visual cues” (PI) \$204,551, 9/1/99 – 8/31/03.

Japan Radio Company discretionary funds (through Washington University) \$30,000, 10/1/99 – 8/31/03.

PATENTS

“Apparatus and Method for the Interactive Customization of Eyeglass Frames” (US Patent 6,944,327)

September 13, 2005; filed November 3, 2000; Provisional filed November 4, 1999.

“Apparatus and Method for Tracking Handwriting from Visual Input” (US Patent 6,044,165)

with M. Munich and P. Perona.

RECREATION

Arts Co-founder and saxophonist of the Jazz quintet *Primigenia* (Italy, 1984-1992). The now quartet is still active with recordings and performances throughout Italy. Organizer of several concerts and music festivals. Finalist in the “Certamen Ciceronianum”, an international competition in the translation of Cicero, Arpino – Italy, 1986.

Sports Member of the National Rowing Team (Italy, 1982-1986). Twice second at the National Championships (single scull), twice winner of European Regattas (Villach, Austria, 1984-1986). Competitor in regional-level ski races (1982-1986).

References

[1] P. Favaro and S. Soatto. *3-D Shape Estimation and Image Restoration: Exploiting Defocus and Motion-Blur*. Springer Verlag, 2005 (in advanced stage of preparation).

[2] Y. Ma, S. Soatto, J. Kosecka, and S. Sastry. *An invitation to 3D vision, from images to models*. Springer Verlag, 2003.

Book Chapters

[3] S. Soatto, A. J. Yezzi, and A. Duci. *Geometric Level Set Methods in Imaging, Vision and Graphics, S. J. Osher and N. Paragios (Eds.)*, chapter Region matching and tracking under deformations and occlusions, pages 319–340. Springer Verlag, 2003.

[4] A. J. Yezzi, S. Soatto, H. Jin, A. Tsai, and A. Willsky. *Geometric Level Set Methods in Imaging, Vision and Graphics, S. J. Osher and N. Paragios (Eds.)*, chapter Mumford-Shah from segmentation to stereo, pages 207–228. Springer Verlag, 2003.

[5] A. Yezzi, S. Soatto, A. Tsai, and A. Willsky. *Mathematics and Multimedia*, chapter Curve and Surface Evolution for Image Segmentation and Stereo Reconstruction Using the Mumford-Shah Functional. IMA, 2002.

[6] S. Soatto. *Progress in systems and control theory: Dynamical systems, control, coding, computer vision*, chapter The accommodation cue in vision, pages 432–448. Birkhouser, 1999.

[7] R. Frezza, G. Picci, and S. Soatto. *The confluence of vision an control, D. Kriegman et al. (eds)*, chapter A Lagrangian formulation of nonholonomic path following, pages 119–133. Springer Verlag, 1998.

[8] R. Frezza, P. Perona, G. Picci, and S. Soatto. *Trends in Control, Alberto Isidori (Ed.)*, chapter System-theoretic aspects of dynamic vision, pages 349–384. Springer Verlag, 1995.

[9] S. Soatto and P. Perona. *Structure-independent visual motion control on the essential manifold*, chapter Sensory Systems, pages 869–876. IFAC Press, Feb. 1995.

Archival Journals

[10] P. Favaro and S. Soatto. A geometric approach to blind deconvolution. *IEEE Trans. Pattern Anal. Mach. Intell.*, (in press), 2004.

[11] H. Jin, S. Soatto, and A. Yezzi. Multi-view stereo reconstruction of dense shape and complex appearance. *Intl. J. of Comp. Vis.*, (in press), 2004.

[12] D. Cremers and S. Soatto. Motion competition: a variational approach to piecewise parametric motion segmentation. *Intl. J. of Comp. Vision*, (in press), 2004.

[13] A. Duci, A. Yezzi, S. Mitter, and S. Soatto. Region matching with missing parts. *Image and Vision Computing*, (in press), 2004.

[14] R. Vidal, Y. Ma, S. Soatto, and S. Sastry. Two-view multibody structure from motion. *Intl. J. of Computer Vision*, (in press) 2004.

[15] A. Yezzi and S. Soatto. Stereoscopic segmentation. *Intl. J. of Computer Vision*, 53(1):31–43, 2003.

[16] A. Yezzi and S. Soatto. Deformation: deforming motion, shape average and the joint segmentation and registration of images. *Intl. J. of Comp. Vis.*, 53(2):153–167, 2003.

[17] H. Jin, R. Tsai, L. Chen, A. Yezzi, and S. Soatto. Estimation of 3d surface shape and smooth radiance from 2d images: A level set approach. *J. of Sci. Comp.*, 19(1-3):267–292, 2003.

[18] P. Favaro, H. Jin, and S. Soatto. A semi-direct approach to structure from motion. *The Visual Computer*, 19:1–18, 2003.

- [19] P. Favaro, A. Mennucci, and S. Soatto. Observing shape from defocused images. *Intl. J. of Comp. Vis.*, 52(1):25–43, 2003.
- [20] G. Doretto, A. Chiuso, Y. Wu, and S. Soatto. Dynamic textures. *Intl. J. of Comp. Vis.*, 51(2):91–109, 2003.
- [21] A. Chiuso, P. Favaro, H. Jin, and S. Soatto. Motion and structure causally integrated over time. *IEEE Trans. Pattern Anal. Mach. Intell.*, 24 (4):523–535, 2002.
- [22] A. Chiuso, R. Brockett, and S. Soatto. Optimal structure from motion: local ambiguities and global estimates. *Intl. J. of Computer Vision*, 39(3):195–228, September 2000.
- [23] Y. Ma, S. Soatto, J. Kosecka, and S. Sastry. Euclidean reconstruction and reprojection up to subgroups. *Intl. J. of Computer Vision*, 38(3):219–229, July 2000.
- [24] S. Soatto and P. Perona. Reducing “structure from motion”: a general framework for dynamic vision. part 1: modeling. *IEEE Trans. Pattern Anal. Mach. Intell.*, 20(9):993–942, September 1998.
- [25] S. Soatto and P. Perona. Reducing “structure from motion”: a general framework for dynamic vision. part 2: Implementation and experimental assessment. *IEEE Trans. Pattern Anal. Mach. Intell.*, 20(9):943–960, September 1998.
- [26] S. Soatto. 3-d structure from visual motion: modeling, representation and observability. *Automatica*, 33:1287–1312, 1997.
- [27] S. Soatto and P. Perona. Motion from fixation. *Int. J. of Real Time Imaging*, 3(2):129–153, 1997.
- [28] S. Soatto and P. Perona. Recursive 3-d visual motion estimation using subspace constraints. *Int. J. of Computer Vision*, 22(3):235–259, 1997.
- [29] S. Soatto, R. Frezza, and P. Perona. Motion estimation via dynamic vision. *IEEE Transactions on Automatic Control*, 41(3):393–414, March 1996.

Proceedings of Refereed International Conferences

- [30] J. Jackson, A. Yezzi, and S. Soatto. Tracking in deformation. In *Proc. of the IEEE Conf. on Decision and Control*, (accepted) 2004.
- [31] B.-W. Hong, M. Mellor, S. Soatto, and M. Brady. Combining topological and geometric features of mammograms to detect masses. In *Proc. Medical Image Understanding and Analysis*, London, September 2004.
- [32] A. Bissacco, P. Saisan, and S. Soatto. Gait recognition using dynamic affine invariants. In *Proc. of the MTNS*, pages TH A8, 1–7, July 2004.
- [33] J. Meltzer, M.-S. Yang, R. Gupta, and S. Soatto. Simultaneous localization and mapping using multiple view feature descriptors. In *IROS*, (in press) 2004.
- [34] D. Cremers, S. J. Osher, and S. Soatto. Kernel density estimation and intrinsic alignment for knowledge-driven segmentation: teaching level set to walk. In *DAGM*, (in press) 2004.
- [35] P. Favaro, M. Burger, and S. Soatto. Motion blur segmentation. In *Proc. of the IEEE Intl. Conf. on Comp. Vis. and Patt. Recog.*, July 2004.
- [36] H. Jin, D. Cremers, A. Yezzi, and S. Soatto. Shedding light in stereoscopic segmentation. In *Proc. of the IEEE Intl. Conf. on Comp. Vis. and Patt. Recog.*, July 2004.
- [37] P. Favaro, M. Burger, and S. Soatto. Scene and motion reconstruction from defocused and motion-blurred images via anisotropic diffusion. In *Proc. of the Eur. Conf. on Comp. Vision*, pages 257–269, May 2004.
- [38] S. Manay, A. J. Yezzi, B. W. Hong, and S. Soatto. Integral invariant signatures. In *Proc. of the Eur. Conf. on Comp. Vision*, pages 87–94, May 2004.

- [39] J. Meltzer, M. Yang, R. Gupta, and S. Soatto. Multiple view feature descriptors from image sequences via kernel principal component analysis. In *Proc. of the Eur. Conf. on Comp. Vision*, pages 215–227, May 2004.
- [40] H. Jin, A. J. Yezzi, and S. Soatto. Region-based segmentation on evolving surfaces with application to 3d shape and radiance estimation. In *Proc. of the Eur. Conf. on Comp. Vision*, pages 114–125, May 2004.
- [41] P. Saisan, A. Bissacco, and A. Chiuso S. Soatto. Modeling and synthesis of facial motion driven by speech. In *Proc. of the Eur. Conf. on Comp. Vision*, pages 456–467, May 2004.
- [42] G. Doretto, E. Jones, and S. Soatto. Spatially homogeneous dynamic textures. In *Proc. of the Eur. Conf. on Comp. Vision*, pages 591–602, May 2004.
- [43] G. Doretto and S. Soatto. Towards plenoptic dynamic textures. In *Proc. of the Workshop Textures 2003*, pages 25–30, October 2003.
- [44] R. Vidal, S. Soatto, and S. Sastry. An algebraic geometric approach to the identification of linear hybrid systems. In *IEEE Conf. on Decision and Control*, December 2003.
- [45] D. Cremers and S. Soatto. A pseudo distance for shape priors in level set segmentation. In *Proc. of the Intl. Workshop on Variational and Level Set Methods*, pages 169–176, October 2003.
- [46] S. Soatto and A. Chiuso. Snippets of identification theory in computer vision. In *Proc. of the IFAC Symp. on System Identification (SYSID)*, August 2003.
- [47] A. Bissacco, P. Saisan, and S. Soatto. Modeling human gaits with subtleties. In *Proc. of the IFAC Symp. on System Identification (SYSID)*, August 2003.
- [48] A. Duci, A. J. Yezzi, S. K. Mitter, and S. Soatto. Shape representation via harmonic embedding. In *Intl. Conf. on Comp. Vision*, pages 656–662, October 2003.
- [49] G. Doretto, D. Cremers, P. Favaro, and S. Soatto. Dynamic texture segmentation. In *Intl. Conf. on Comp. Vision*, pages (2) 1236–1242, October 2003.
- [50] D. Cremers and S. Soatto. Variational space-time motion segmentation. In *Intl. Conf. on Comp. Vision*, pages (2) 886–892, October 2003.
- [51] P. Favaro, A. Duci, Y. Ma, and S. Soatto. On exploiting occlusions in multiple view geometry. In *Intl. Conf. on Comp. Vision*, pages 479–486, October 2003.
- [52] S. Soatto, A. J. Yezzi, and H. Jin. Tales of shape and radiance in multiview stereo. In *Intl. Conf. on Comp. Vision*, pages 974–981, October 2003.
- [53] A. J. Yezzi and S. Soatto. Structure from motion for scenes without features. In *Proc. IEEE Conf. on Comp. Vision and Pattern Recogn.*, pages I–525–532, June 2003.
- [54] H. Jin, S. Soatto, and A. J. Yezzi. Multi-view stereo beyond lambert. In *Proc. IEEE Conf. on Comp. Vision and Pattern Recogn.*, pages I–171–178, June 2003.
- [55] P. Favaro, S. Soatto, L. Vese, and S. J. Osher. Shape from anisotropic diffusion. In *Proc. IEEE Conf. on Comp. Vision and Pattern Recogn.*, pages I–179–186, June 2003.
- [56] P. Favaro and S. Soatto. Seeing beyond occlusions (and other marvels of a finite lens aperture). In *Proc. IEEE Conf. on Comp. Vision and Pattern Recogn.*, pages II–579–586, June 2003.
- [57] G. Doretto and S. Soatto. Editable dynamic textures. In *Proc. IEEE Conf. on Comp. Vision and Pattern Recogn.*, pages II–137–142, June 2003.
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