



Pietro Morerio

Curriculum Vitae

Education

- 2013–2016 **PhD in Computational Intelligence**, Information Technology for Interacting Cognitive Environments. University of Genova, (Italy). Thesis: "*Hand-related Methods in Egocentric Vision*". **GTTI Award for PhD Theses winner**.
- 2007–2010 **MSc in Physics (cum Laude)** Faculty of Science, Università degli Studi di Milano, Milan (Italy). Thesis: "*Supersymmetric Black Holes in anti-de Sitter*".
- 2004–2007 **BSc in Physics** Faculty of Science, Università degli Studi di Milano, Milan (Italy). Thesis: "*Kerr Black Holes*".

Professional Experience

Academic - Research and teaching

- 2016 - Pres. **Post Doc Researcher**. Pattern Analysis and computer VISION (PAVIS) group @ **Italian Institute for Technology** (IIT). Genoa (Italy).
- 2013 - 2016 **PhD candidate**. Computational Intelligence program - University of Genoa (Italy).
- 2011 - 2012 **Research Fellow**, Dept. of Electrical, Electronic, Telecommunications Engineering, and Naval Architecture (DITEN), University of Genoa (Italy) @ **ISIP40 Research group** & **TECHNOAWARE S.R.L.**
- 2013 - 2018 **IEEE Member**
Referee/Reviewer: *Pattern Recognition Letters, Signal Processing Letters, IEEE Transactions on Image Processing, IEEE Transactions on Circuits and Systems for Video Technology, International Journal of Image and Data Fusion.*
- 2013 - 2016 **Cognitive Telecommunication Systems** - Teaching aid and Lab assistance.
- 2011 - 2016 **Supervision of MSc and BSc thesis** .

Projects

- 2016-2017 **Avio Aero** Detection and localization of machining swarf in engine oil pipes
- 2012-2013 **nShield** - SPD (Security, Privacy, Dependability) in Embedded Systems
- 2012 **OMBRA** - Smart transportation, embedded platforms

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- 2011 **Sintesis** - Integrated System for Distributed Intelligence Security
Other
- 2010 **LCM cluster** - Staff member: system maintenance, software and hardware management, server farm management, users assistance.

Research Interests

Machine Learning, Computer Vision, Deep Learning, Multimodal Learning, Pattern Recognition, Computational Intelligence, Signal Processing.

Software experience

Programming Languages: Python, C/C++, Matlab, Mathematica, Fortran
Computer Vision: OpenCV (C++)
Deep Learning: Tensorflow, Theano, PyTorch, Caffe

Languages

Italian (native), English (C2), Spanish (A2).

Publications

N. C. Garcia, P. Morerio, and V. Murino, “Modality distillation with multiple stream networks for action recognition,” in *The European Conference on Computer Vision (ECCV)*, September 2018.

P. Morerio, J. Cavazza, and V. Murino, “Minimal-entropy correlation alignment for unsupervised deep domain adaptation,” in *International Conference on Learning Representations*, 2018.

R. Volpi, P. Morerio, S. Savarese, and V. Murino, “Adversarial feature augmentation for unsupervised domain adaptation,” in *The IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, June 2018.

J. Cavazza, P. Morerio, B. Haeffele, C. Lane, V. Murino, and R. Vidal, “Dropout as a low-rank regularizer for matrix factorization,” in *International Conference on Artificial Intelligence and Statistics*, pp. 435–444, 2018.

A. Zunino, P. Morerio, A. Cavallo, C. Ansuini, J. Podda, F. Battaglia, E. Vene-selli, C. Becchio, and V. Murino, “Video gesture analysis for autism spectrum disorder detection,” in *International Conference on Pattern Recognition*, 2018.

J. Cavazza, P. Morerio, and V. Murino, “A compact kernel approximation for 3d action recognition,” in *International Conference on Image Analysis and Processing*, pp. 211–222, Springer, 2017.

J. Cavazza, P. Morerio, and V. Murino, “When kernel methods meet feature learning: Log-covariance network for action recognition from skeletal data,” in *The IEEE Conference on Computer Vision and Pattern Recognition (CVPR) Workshops*, July 2017.

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P. Morerio, J. Cavazza, R. Volpi, R. Vidal, and V. Murino, “Curriculum dropout,” in *The IEEE International Conference on Computer Vision (ICCV)*, Oct 2017.

M. Baydoun, A. Betancourt, P. Morerio, L. Marcenaro, M. Rauterberg, and C. Regazzoni, “Hand pose recognition in first person vision through graph spectral analysis,” in *2017 IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)*, pp. 1872–1876, March 2017.

A. Betancourt, P. Morerio, E. Barakova, L. Marcenaro, M. Rauterberg, and C. Regazzoni, “Left/right hand segmentation in egocentric videos,” *Computer Vision and Image Understanding*, vol. 154, pp. 73 – 81, 2017.

A. Mazzù, P. Morerio, L. Marcenaro, and C. S. Regazzoni, “A cognitive control-inspired approach to object tracking,” *IEEE Transactions on Image Processing*, 2016.

P. Morerio, G. C. Georgiu, L. Marcenaro, and C. Regazzoni, “Optimizing superpixel clustering for real-time egocentric-vision applications,” *IEEE Signal Processing Letters*, vol. 22, pp. 469–473, April 2015.

A. Betancourt, P. Morerio, C. Regazzoni, and M. Rauterberg, “The evolution of first person vision methods: A survey,” *Circuits and Systems for Video Technology, IEEE Transactions on*, vol. PP, no. 99, pp. 1–1, 2015.

A. Betancourt, P. Morerio, L. Marcenaro, E. Barakova, M. Rauterberg, and C. Regazzoni, “Towards a unified framework for hand-based methods in first person vision,” in *Multimedia Expo Workshops (ICMEW), 2015 IEEE International Conference on*, pp. 1–6, June 2015.

A. Betancourt, P. Morerio, E. Barakova, L. Marcenaro, M. Rauterberg, and C. Regazzoni, “A dynamic approach and a new dataset for hand-detection in first person vision,” in *Computer Analysis of Images and Patterns* (G. Azzopardi and N. Petkov, eds.), vol. 9256 of *Lecture Notes in Computer Science*, pp. 274–287, Springer International Publishing, 2015.

A. Betancourt, P. Morerio, L. Marcenaro, M. Rauterberg, and C. Regazzoni, “Filtering svm frame-by-frame binary classification in a detection framework,” in *Image Processing (ICIP), 2015 IEEE International Conference on*, pp. 2552–2556, Sept 2015.

S. Chiappino, P. Morerio, L. Marcenaro, and C. Regazzoni, “Bio-inspired Relevant Interaction Modelling in Cognitive Crowd Management,” *Journal of Ambient Intelligence and Humanized Computing*, pp. 1–22, 2014.

P. Morerio, L. Marcenaro, and C. S. Regazzoni, “A generative superpixel method,” in *17th IEEE International Conference on Information Fusion (FUSION 2014)*, 2014.

P. Morerio, M. Pompei, L. Marcenaro, and C. S. Regazzoni, “Exploiting an event based state estimator in presence of sparse measurements in video analytics,” in

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2014 *IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)*, pp. 1871–1875, May 2014.

S. Chiappino, L. Marcenaro, P. Morerio, and C. Regazzoni, “Event Based Switched Dynamic Bayesian Networks for Autonomous Cognitive Crowd Monitoring,” in *Augmented Vision and Reality*, Augmented Vision and Reality, pp. 1–30, Springer Berlin Heidelberg, 2013.

S. Chiappino, P. Morerio, L. Marcenaro, and C. S. Regazzoni, “Event definition for stability preservation in bio-inspired cognitive crowd monitoring,” in *Digital Signal Processing (DSP), 2013 18th International Conference on*, pp. 1–6, July 2013.

S. Chiappino, P. Morerio, L. Marcenaro, and C. S. Regazzoni, “A bio-inspired Knowledge Representation Method for Anomaly Detection in Cognitive Video Surveillance Systems,” in *Information Fusion (FUSION), 2013 16th International Conference on*, pp. 242–249, July 2013.

P. Morerio, L. Marcenaro, and C. Regazzoni, “Hand detection in first person vision,” in *Information Fusion (FUSION), 2013 16th International Conference on*, pp. 1502–1507, 2013.

S. Chiappino, P. Morerio, L. Marcenaro, and C. Regazzoni, “Run length encoded dynamic bayesian networks for probabilistic interaction modeling,” in *21th European Signal Processing Conference (EUSIPCO 2013)*, (Marrakech, Morocco), September 2013.

P. Morerio, K. Dabcevic, L. Marcenaro, and C. Regazzoni, “Distributed cognitive radio architecture with automatic frequency switching,” in *Complexity in Engineering (COMPENG), 2012*, pp. 1–4, june 2012.

P. Morerio, L. Marcenaro, C. S. Regazzoni, and G. Gera, “Early fire and smoke detection based on colour features and motion analysis,” in *Image Processing (ICIP), 2012 19th IEEE International Conference on*, pp. 1041–1044, 30 2012–Oct. 3.

P. Morerio, L. Marcenaro, and C. S. Regazzoni, “People count estimation in small crowds,” in *Advanced Video and Signal-Based Surveillance (AVSS), 2012 IEEE Ninth International Conference on*, pp. 476–480, sept. 2012.

L. Marcenaro, P. Morerio, and C. S. Regazzoni, “Performance evaluation of multi-camera visual tracking,” in *Advanced Video and Signal-Based Surveillance (AVSS), 2012 IEEE Ninth International Conference on*, pp. 464–469, Sept 2012.

S. Chiappino, P. Morerio, L. Marcenaro, E. Fuiano, G. Repetto, and C. Regazzoni, “A multi-sensor cognitive approach for active security monitoring of abnormal overcrowding situations in critical infrastructure,” *15th International Conference on Information Fusion*, July 2012.

S. Chiappino, P. Morerio, L. Marcenaro, and C. Regazzoni, “Simulation based learning of operator-environment interactions for dynamic crowd monitoring

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by means of a bayesian dynamical switching model,” in *Decennale Movimento Italiano Modellazione e Simulazione, MIMOS 2012*, 2012.

📄 Full list of publications is available on my [Google Scholar page](#).

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