

Curriculum Vitae et Studiorum

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Elenco delle pubblicazioni

International Journals/Books

1. D. Vitulano, V. Bruni, P. Ciarlini, "Line Scratch Detection on Digital Images: An Energy Based Model", in **Journal of WSCG**, Special Issue, vol. 10, no. 2, pp. 447-484, 2002.
2. V. Bruni, D. Vitulano, "A Generalized Model for Scratch Detection", **IEEE Transactions on Image Processing**, Vol. 13, No. 1, pp. 44-50, January 2004.
3. V. Bruni, D. Vitulano, "Old Movies Noise Reduction via Wavelets and Wiener Filter", **Journal of WSCG**, Vol. 12, pp. 65-72, ISSN 1213-6972, 2004.
4. V. Bruni, U. Maniscalco, D. Vitulano, "Fast Segmentation and Modeling of Range Data via Steerable Pyramid and Superquadrics", **Journal of WSCG**, Vol. 12, pp. 73-80, ISSN 1213-6972, 2004.
5. V. Bruni, D. Vitulano, "Wavelet based Signal De-noising via Simple Singularities Approximation", **Signal Processing Journal**, Elsevier Science, Vol. 86, pp. 859-876, April 2006.
6. V. Bruni, B. Piccoli, D. Vitulano, "Time Scale Dependencies for Image Compression", **Journal of Multimedia**, Academic Press, Vol.1 , Issue 1, pp. 44-55, April 2006.
7. L. Appolonia, V. Bruni, R. Cossu, D. Vitulano, "Computer-aided Monitoring of Buildings of Historical Importance based on Color", **Journal of Cultural Heritage**, Elsevier Science, (7) 2006, pp. 85-91.
8. V. Bruni, D. Vitulano, "Combined Image Compression and Denoising using Wavelets", **Signal Processing: Image Communication**, Elsevier Science, Vol. 22, Issue 1, pp. 86-101, January 2007.
9. V. Bruni, B. Piccoli, D. Vitulano, "Wavelets and Pde for Image Denoising", **Electronic Letters on Computer Vision and Image Analysis (ELCVIA)**, Special Issue on Partial Differential Equations Methods in Graphics and Vision, Vol. 6, No. 2, pp. 36-53, January 2008.
10. V. Bruni, P. Ferrara, D. Vitulano, "Removal of Color Scratches from Old Motion Picture Films Exploiting Human Perception", **EURASIP Journal on Advances in Signal Processing**, special issue in Digital Automatic Restoration of Audiovisual Archives, vol. 2008, 2008.
11. V. Bruni, D. De Canditiis, D. Vitulano, "Phase Information and Space Filling Curves in Noisy Motion Estimation", **IEEE Transactions on Image Processing**, Vol. 18, No. 7, pp. 1660-1664, July 2009.
12. V. Bruni, B. Piccoli, D. Vitulano, "A Fast Computation Method for Time-scale Signal Denoising", **Signal Image and Video Processing**, Springer, Vol. 3, pp. 63-83, 2009.
13. V. Bruni, G. Ramponi, A. Restrepo, D. Vitulano, "Context based Defading of Archive Photographs", **EURASIP Journal on Image and Video Processing**, Special Issue on Image and Video Processing for Cultural Heritage, vol. 2009.
14. V. Bruni, S. Marconi, D. Vitulano, "Time-scale Atoms Chains for Transients Detection in Audio Signals", **IEEE Transactions on Audio, Speech and Language Processing**, vol. 18, no. 3, pp. 420 - 433, March 2010.
15. V. Bruni, D. De Canditiis, D. Vitulano, "Local Sorting for Adaptive Signal Regularization", **IEEE Signal Processing Letters**, vol. 17, no. 7, pp. 691 - 694, July 2010.

16. V. Bruni, D. Vitulano, "Time Scale Similarities for Robust Image Denoising", **Journal of Mathematical Vision and Imaging**, vol. 44, no. 1, pp. 52-64, September 2012.
17. V. Bruni, E. Rossi, D. Vitulano, "On the Equivalence between Jensen-Shannon Divergence and Michelson Contrast", **IEEE Transactions on Information Theory**, vol 58, no. 7, pp. 4278-4288, July 2012.
18. V. Bruni, D. De Canditiis, D. Vitulano, "Time-scale energy based analysis of contours of real-world shapes", **Mathematics and Computers in Simulation**, Elsevier, vol. 12, p. 2891-2907, 2012
19. V. Bruni, A. Crawford, A. Kokaram, D. Vitulano, "Semi-transparent Blotches Removal from Sepia Images Exploiting Visibility Laws", **Signal Image and Video Processing**, Springer, vol. 7, no. 1, pp. 11-26, DOI: 10.1007/s11760-011-0220-1, Jan. 2013.
20. V. Bruni, S. Marconi, B. Piccoli, D. Vitulano, Instantaneous frequency estimation of interfering FM signals through time-scale isolevel curves, **Signal Processing**, Elsevier Science, vol. 93, no. 4, p. 882-896, April 2013
21. V. Bruni, E. Rossi, D. Vitulano, "Jensen Shannon Divergence for Visual Quality Assessment", **Signal Image and Video Processing**, Springer, Special Issue on Human Vision and Information Theory, Vol. 7, No. 3, May 2013.
22. V. Bruni, E. Rossi, D. Vitulano, A Model for the Restoration of Semi-transparent Defects Based on Lie Groups and Human Visual System, Computer Vision, Imaging and Computer Graphics. Theory and Application, **Communications in Computer and Information Science serie**, Springer, vol. 0359, pp. 354-368, 2013, selected paper in VISAPP 2012.
23. V. Bruni, E. Rossi, D. Vitulano, Automated Restoration of Semi-Transparent Degradation via Lie Groups and Visibility Laws, **Mathematics and Computers in Simulation**, Elsevier Science, vol. 106, issue C, pp. 109-123, 2014.
24. V. Bruni, D. De Canditiis, D. Vitulano, "Speed up of Video Enhancement based on Human Perception", **Signal Image and Video Processing**, Springer, vol. 8, pp. 1109-1209, 2014.
25. V. Bruni, D. Vitulano, An Improvement of Kernel-based Object Tracking based on Human Perception, **IEEE Transactions on Systems, Man and Cybernetics: Systems**, vol. 44, no. 11, pp. 1474-1485, Nov. 2014.
26. V. Bruni, D. Vitulano, A robust perception based method for iris tracking, **Pattern Recognition Letters**, Elsevier Science, vol. 57, pp. 74-80, May 2015.

Chapters in International Books

1. V. Bruni, A. Crawford, A. Kokaram, D. Vitulano, "Visual perception of semi-transparent blotches: detection and restoration", invited chapter in **I-Tech Book: Brain, Vision and AI**, chapter 1, 2008.
2. A. Kokaram, D. Vitulano, D. Corrigan, V. Bruni, "Advances in Automated Restoration of Archived Video", invited chapter in **Digital Imaging for Cultural Heritage Preservation**, CRC Press, 2011.
3. V. Bruni, D. Vitulano, Methods and perspectives in face tracking based on human perception, invited chapter in "Face recognition in adverse conditions", IGI Global 2014.

Editorials

1. V. Bruni, D. Vitulano, Z. Wang, "Special Issue on Human Vision and Information Theory", **Signal Image and Video Processing**, Springer, Vol. 7, No. 3, May 2013.

International Conferences

1. V. Bruni, D. Vitulano, "Scratch Detection via Underdamped Harmonic Motion", Proceedings of **IEEE International Conference on Pattern Recognition ICPR 2002**, Quebec City - CANADA, Vol. 3, No. 3, pp. 887-890, 2002.
2. V. Bruni, D. Vitulano, "Signal Denoising via Overlapping Atoms in a Wavelet Domain", Proceedings of **IEEE International Symposium on Image and Signal Processing and Analysis ISPA 2003**, pp. 459-464, Rome - ITALY 2003.
3. V. Bruni, A. Kokaram, D. Vitulano, "Line Scratches Detection and Restoration via Light Diffraction", Proceedings of **IEEE International Symposium on Image and Signal Processing and Analysis ISPA 2003**, pp. 5-10, Rome - ITALY 2003.
4. V. Bruni, D. Vitulano, "A Wiener Filter Improvement Combining Wavelet Domains", Proceedings of **IAPR Conference ICIAP 2003**, pp. 518-523, Mantova - ITALY 2003.
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6. V. Bruni, A. Kokaram, D. Vitulano, "Fast Removal of Line Scratches in Old Movies", Proceedings of **IEEE International Conference on Pattern Recognition ICPR 2004**, pp. 827-830, Cambridge, August 2004.
7. V. Bruni, D. Vitulano, "Wavelet Atoms Approximation for Simultaneous Image Compression and Denoising", in Proceedings of **IEEE International Conference on Image Processing 2005 (ICIP 05)**, pp. 105-110.
8. V. Bruni, B. Piccoli, D. Vitulano, "Wavelet Time-scale Dependencies for Signal and Image Compression" in Proceedings of **IEEE International Symposium on Image and Signal Processing and Analysis 2005 (ISPA05)**, pp. 105-110.
9. V. Bruni, A. Crawford, F. Stanco, D. Vitulano, "Visibility based Detection and Removal of Semi-Transparent Blotches on Archived Documents" in Proceedings of **International Conference on Computer Vision Theory and Application (VISAPP06)**, Portugal, February 2006, Vol. 1, pp. 64-71.
10. V. Bruni, B. Piccoli, D. Vitulano, "Signal and Image Denoising via Scale-Space Atoms" in Proceedings of **IEEE-EURASIP 14th European Signal Processing Conference (EUSIPCO06)**, Florence - Italy, September 2006.
11. V. Bruni, D. De Canditiis, D. Vitulano, "Fast Motion Estimation using Spatio Temporal Filtering", special issue on **Lecture Notes in Computer Science**, Proceedings of International Conference on Image Analysis and Recognition ICIAR 2006, vol. 1, pp. 105-110.
12. E. Ardizzone, V. Bruni, V. Cappellini, A. De Polo, H. Dindo, U. Mascalco, S. Minelli, L. Moltedo, A. Piva, G. Ramponi, G. Sajeve, D. Vitulano, "A knowledge based model for digital restoration and enhancement of images concerning archaeological and monumental heritage of the mediterranean coast", Proceedings of the **International Conference on Electronic Imaging and Visual Arts (EVA Florence 2006)**, pp. 120-125, Firenze 2006.
13. G. Ramponi, V. Bruni, "Virtual Restoration of Faded Photographic Prints" in Proceedings of **IEEE-EURASIP 14th European Signal Processing Conference (EUSIPCO06)**, Florence - Italy, September 2006.
14. V. Bruni, A. Crawford, D. Vitulano, "Visibility based Detection of Complicated Objects: A Case Study", Proceedings of the **IET 3rd European Conference on Visual Media Production (CVMP) 2006**, London, pp. 55-64, November 2006.
15. V. Bruni, D. De Canditiis, D. Vitulano, "Phase based estimation for noisy sequences", Proceedings of **IEEE International Conference on Systems, Signals and Image Processing IEEE-IWSSIP 2007**, Maribor, Slovenia, pp. 399-402, June 2007.
16. V. Bruni, A. Crawford, A. Kokaram, D. Vitulano, "Multi-scale semi-transparent blotch removal on archived photographs using Bayesian matting techniques and visibility laws", Proceedings of **IEEE**

International Conference on Image Processing 2007 (ICIP 07), vol. 1, pp. 561-564, S. Antonio, Texas, September 2007.

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18. L. Appolonia, V. Bruni, P. Salonia, D. Vitulano, "Automatic placement of sensors for cultural heritage monitoring", Proceedings of **International Conference on Electronic Imaging and Visual Arts (EVA Florence 2007)**, pp. 96-101, Florence 2007.
19. L. Appolonia, V. Bruni, R. Cossu, D. Vitulano, "Computer-aided monitoring of chemical decay in historical buildings based on color", Proceedings of **International Conference on Electronic Imaging and Visual Arts (EVA Florence 2007)**, pp.164-169, Florence 2007.
20. A. Restrepo, C. Alvarado, V. Bruni, G. Ramponi, "Objective measures for the evaluation of techniques for the virtual restoration of faded sepia photographic prints", Proceedings of **International Conference on Electronic Imaging and Visual Arts (EVA Florence 2007)**, pp. 108-113, Florence 2007.
21. V. Bruni, D. Vitulano, "Shape Analysis for Monitoring Cavities on Historical Buildings", Proceedings of **the International Conference on Electronic Imaging and Visual Arts EVA Florence 2008**, pp. 132-137, April 2008.
22. V. Bruni, A.J. Crawford, A. Kokaram, D. Vitulano, "Perception measures for digital detection and restoration of semi-transparent blotches", Mobile Multimedia/Image Processing, Security, and Applications 2008. Edited by Agaian, Sos S.; Jassim, Sabah A. **Proceedings of the SPIE**, Volume 6982, pp. 69820J-69820J-11 (2008) **SPIE Defense Security**, Orlando Florida, March 2008.
23. V. Bruni, P. Ferrara, D. Vitulano, "Color Scratches Removal using Human Perception", special issue on **Lecture Notes in Computer Science**, vol. 2008(5112), Proceedings of the 5th International Conference, ICIAR 2008, Povoia de Varzim, Portugal, June 25-27, 2008, pp. 33-42, June 2008.
24. V. Bruni, B. Piccoli, D. Vitulano, "A Fast Scheme for multiscale signal denoising", special issue on **Lecture Notes in Computer Science**, vol. 2008(5112), Proceedings of the 5th International Conference, ICIAR 2008, Povoia de Varzim, Portugal, June 25-27, 2008, pp. 23-32, June 2008.
25. V. Bruni, G. Ramponi, A. Restrepo, D. Vitulano, "Restoration of faded images without noise amplification", Proceedings of the **IEEE-EURASIP 16th European Signal Processing Conference, EUSIPCO 2008**, Lausanne, August 2008.
26. V. Bruni, D. Vitulano, "A Wavelet based Coding Scheme via Atomic Approximation and Adaptive Sampling of the Lowest Frequency Band", Proceedings of **the IEEE-EURASIP 16th European Signal Processing Conference, EUSIPCO 2008**, Lausanne, August 2008.
27. V. Bruni, D. Vitulano, "Transients detection in the time scale domain", special issue on **Lecture Notes in Computer Science**, vol. 5099/2008, Proceedings of the **3rd International Conference, ICISP 2008** Cherbourg-Octeville, France, July 1-3, 2008, pp. 254-262.
28. V. Bruni, B. Piccoli, D. Vitulano, "Following edges along scales", Proceedings of the **IASTED International Conference VIIP 2008**, Palma de Mallorca, September 2008.
29. V. Bruni, D. Vitulano, "Image denoising using similarities in the time scale plane", special issue on **Lecture Notes in Computer Science** vol. 5259(2008), Proceedings of the International Conference ACIVS 2008, Juan les Pins, October 2008, pp. 368-379.
30. V. Bruni, D. De Canditiis, D. Vitulano, "Time scale descriptors of highly oscillating contours", Proc. of **MASCOT 2009**, August 2009.
31. V. Bruni, S. Marconi, D. Vitulano, "Instantaneous Frequency Detection via Ridge Neighbor Tracking", Proceedings of **IEEE International Conference CIP 2010**, Isola D'Elba (Italy), June 2010.
32. V. Bruni, E. Rossi, D. Vitulano, "Optimal Image Restoration using HVS-based Rate-Distortion Curve", **Lecture Notes in Computer Science**, Proceedings of 14th International Conference, CAIP 2011 Seville, Spain August 2011, Part II pp. 261-268.
33. V. Bruni, D. De Canditiis, D. Vitulano, "Human Visual System for complexity reduction of image and video restoration", **Lecture Notes in Computer Science**, Proceedings of 14th International Conference, CAIP 2011 Seville, Spain August 2011, Part II.

34. V. Bruni, E. Rossi, D. Vitulano, "Visual perception and Lie algebra for image restoration", Proc. of **MASCOT 2011**, October 2011.
35. V. Bruni, D. Vitulano, G. Ramponi, "Image Quality Assessment through a Subset of the Image Data", **IEEE International Symposium on Image and Signal Processing and Analysis**, ISPA 2011, September 4-6, 2011, Dubrovnik, Croatia.
36. V. Bruni, E. Rossi, D. Vitulano, "Image Restoration via Human Perception and Lie Groups", in Proceedings of **VISAPP 2012**, vol. 1, pp. 66-74, Rome, Italy, February 2012.
37. V. Bruni, E. Rossi, D. Vitulano, "Unsupervised Perception-based Image Restoration of Semi-transparent Degradation using Lie Group Transformations", in Proceedings of **WSCG 2012**, Plzen, CZ, June 2012.
38. V. Bruni, E. Rossi, D. Vitulano, "Perceptual Object Tracking", in Proceedings of **IEEE International Workshop BIOMS 2012**, Salerno, Italy, September 2012.
39. V. Bruni, D. Vitulano, Signal and image denoising without regularization, Proceedings of **IEEE International Conference on Image Processing 2013**, Melbourne, Australia, Sept. 2013
40. V. Bruni, D. Vitulano, Evaluation of degraded images using adaptive Jensen-Shannon divergence, Proceedings of **IEEE International Symposium on Image and Signal Processing and Analysis**, ISPA 2013, Trieste, Italy, Sept. 2013.
41. V. Bruni, F. Pitolli, C. Pucci, An inversion method based on random spatial sampling for magnetic tomography, to appear in Proceedings of **MASCOT 2013**.
42. V. Bruni, D. Vitulano, A Perception-Based Interpretation of the Kernel-Based Object Tracking, Lecture Notes in Computer Science, vol. 8192, Proc. of ACIVS 2013, pp. 596-607, 2013
43. V. Bruni, D. Vitulano, A fast computation method for IQA metrics based on their typical set, Proceedings of ICPRAM 2014 - Int'l Conf. on Pattern Recognition Applications and Methods (Angers/France)
44. V. Bruni, D. Vitulano, Z. Wang, A novel spatial pooling technique for image quality assessment based on luminance-contrast dependence, Proceedings of EUVIP'2014 : Fifth European Workshop on Visual Information Processing, Paris, 10-12 Dec. 2014
45. V. Bruni, G. Ramella, D. Vitulano, Automatic Perceptual Color Quantization of Dermoscopic Images, Proceedings of the 10th International Conference on Computer Vision Theory and Applications VISAPP 2015, SciTePress, Lisbona, pp. 323-330, March 2015
46. F. Angelini, V. Bruni, I. Selesnick, D. Vitulano, A rational-dilation wavelet transform with signal dependent dilation factor, Proc. of MASCOT 2015, June 2015
47. V. Bruni, D. Panella, D. Vitulano, Non Local Means Image Denoising using Noise-Adaptive SSIM, Proc. of IEEE-EURASIP International Conference EUSIPCO 2015, Nice, France, Sept. 2015
48. V. Bruni, L. Tarchi, I. Selesnick, D. Vitulano, An adaptive perception-based image preprocessing method, Proc. of IEEE-EURASIP International Conference EUSIPCO 2015, Nice, France, Sept. 2015
49. F. Angelini, V. Bruni, I. Selesnick, D. Vitulano, Adaptive Scale Selection for Multiscale Image Denoising, Lecture Notes in Computer Science, vol. 9386, Proc. of ACIVS 2015, pp. 81-92, 2015
50. V. Bruni, D. Vitulano, An entropy-based model for a fast computation of SSIM, Proc. of Visapp 2016, Rome, Italy, Feb. 2016

Abstracts in International Conferences

1. Tecchio F, Vittoria B, Pascarella A, Cottone C, Cancelli A, Vitulano D (2015). Brain functional Connectivity at Rest as Similarity of neuronal Activities . In: OHBM 2015. Honolulu, Hawaii

2. Tecchio F, Bruni V, Pascarella A, Cottone C, Cancelli A, Vitulano D (2015). Brain functional connectivity at rest as similarity of neuronal activities. In: BACI 2015. Utrecht, 1-5 Settembre 2015

National Books

1. V. Bruni, M.R. Romano, D. Vitulano, "Estrazione di regioni di interesse nelle immagini dei Beni Culturali", in **Comunicazione Multimediale per i beni culturali**, pp. 169-180 , Addison-Wesley ed., 2003.

National Conferences

1. V. Bruni, "Scratch Detection in Moving Image Sequences", in Proc. of Primo Convegno della Sezione Italiana di EUROGRAPHICS 2002, Milano, Italy, 2002.
2. V. Bruni, R. Cossu, U. Maniscalco, D. Vitulano, "Methodologies for a computer aided monitoring of cultural heritage degradation", Atti del convegno SIMAI 2004.
3. V. Bruni, A. Crawford, D. Vitulano, "A visibility based model for restoration of archived films", Multimedia.Information@Designfor Cultural Heritage'05 (MIDECH05), Editors Maurizio Rossi, Paolo Salonia ISBN 88 7999, pp. 184-190.
4. E. Ardizzone, V. Bruni, V. Cappellini, A. De Polo, H. Dindo, U. Maniscalco, S. Minelli, L. Moltedo, A. Piva, G. Ramponi, G. Sajeve, D. Vitulano, "A Model for Digital Restoration and Enhancement of Historical Images", Atti del convegno SIMAI 2006, Ragusa.
5. L. Appolonia, V. Bruni, P. Salonia, D. Vitulano, "Monitoraggio della mappa di rischio di monumenti a larga scala mediante elaborazione di immagini", in Proceedings of V Congresso Nazionale di Archeometria- Scienza e Beni Culturali, AIAR08, Siracusa, 2008.
6. V. Bruni, A.J. Crawford , D. Vitulano, "Novel perception measures for the detection of semi-transparent blotches", Atti del Convegno SIMAI 2008, Rome, September 2008.
7. V. Bruni, G. Ramella, D. Vitulano, "Morphological operators and perception laws for the automatic detection of cracks in digitized paintings", Atti del Convegno SIMAI 2010, Cagliari, June 2010.
8. V. Bruni, "Alcune proprietà della Trasformata Wavelet Razionale e sue applicazioni", Congresso UMI, Bologna, Italy, September 2011.
9. V. Bruni, F. Pitolli, On GP wavelets and their applications in signal and image processing, "Subdivision and Refinability" 2011, Pontignano, Siena, Italy, 15-19 September 2011
10. V. Bruni, M.A. Cotronei, F. Pitolli, "Nonstationary biorthogonal wavelet filters", Atti del Convegno SIMAI 2012, Torino, June 2012.
11. V. Bruni, Time-scale atoms chains for image restoration, Minisimposio "Numerical modelling for problem solving in real life", 7th European Conference on Elliptic and Parabolic Problems, Gaeta, May 2012
12. L. Moltedo, D. Vitulano, V. Bruni, P. Salonia, An Integrated Navigation System for Historical Buildings Preservation in a Urban Environment, 1st International Conference RICH 2012 "Robotic innovation for Cultural Heritage", Venice 3-4 December 2012
13. V. Bruni, C. Pucci, F. Pitolli, Neuroelectric current imaging by random spatial sampling, Workshop on Multivariate Approximation and Interpolation with Application. Erice (TP), 25-30 September, 2013
14. V. Bruni, R. Ceccarelli, V. Ricco, D. Vitulano, Efficient Image Processing Tools for Confocal Microscopy: A Case Study, Abstract of ECMI 2014, Taormina - Italy, June 2014.
15. D. Vitulano, V. Bruni, R. Ceccarelli, V. Ricco, Image Processing Techniques for Confocal Microscopy: A Case Study, Abstract of AIRO 2014, Como-Italy, September 2014.

Roma, 01 Aprile 2016

In fede

Vittoria Bruni

A handwritten signature in black ink, reading "Vittoria Bruni". The signature is written in a cursive, slightly slanted style.