

DOMENICO DANIELE BLOISI, PhD, Eng.

Curriculum Vitae

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General Information

Full Name Domenico Daniele Bloisi
Date of Birth 06 January 1982
Place of Birth Salerno (SA)
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Education

Visiting professor	2013	GRASP Lab, University of Pennsylvania, Philadelphia, USA	
Ph.D. in Computer Engineering	2010	Dept. of Computer, Control, and Management Engineering, Sapienza University of Rome (Italy)	Final grades: excellent (ottimo) Thesis title: Visual Tracking and Data Fusion for Automatic Video Surveillance
Visiting scholar	2008	Digital Imaging Research Centre (DIRC), Faculty of Computing, Information Systems and Mathematics (CISM), Kingston University, London (UK)	Supervisor Prof. Paolo Remagnino
Post-graduate studies	2006	Sapienza University of Rome (Italy)	Master's degree Computer Engineering Final grades: 110/110 cum laude
Licensure	2006	Sapienza University of Rome (Italy)	Professional qualification examination (Esame di Stato)
University graduation	2004	Sapienza University of Rome (Italy)	Bachelor's degree Computer Engineering Final grades: 110/110

Appointments

Academic Appointments

2017		Dept. of Computer Science University of Verona (Italy)	Fixed-term (3 years) Assistant Professor (Ricercatore a Tempo Determinato RTDA)
Jan 2016	Dec 2016	Dept. of Computer, Control, and Management Engineering, Sapienza University of Rome (Italy)	Research associate (Assegnista di Ricerca)
2012	2015	Dept. of Computer, Control, and Management Engineering, Sapienza University of Rome (Italy)	Fixed-term (3 years) Assistant Professor (Ricercatore a Tempo Determinato RTDA)
2009	2010	Dept. of Computer Science University of Verona (Italy)	Research associate (Assegnista di Ricerca)

Other Appointments

2010	2012	CINI – Consorzio Interuniversitario Nazionale per l'Informatica	Software Engineer
2008	2009	Dept. of Computer, Control, and Management Engineering, Sapienza University of Rome (Italy)	Software Engineer
2007	2008	Archimes Logica SRL	Software Engineer
2006	2007	Dept. of Computer, Control, and Management Engineering, Sapienza University of Rome (Italy)	Software Engineer

Teaching experience

2016	Dipartimento di Ingegneria Informatica, Automatica e Gestionale “Antonio Ruberti” Università degli studi di Roma “La Sapienza”	Seminar during the PhD course “Great Ideas in ICT”
2015	Dipartimento di Ingegneria Informatica, Automatica e Gestionale “Antonio Ruberti” Università degli studi di Roma “La Sapienza”	Seminar during the course “Human-Robot Interaction” Master Degree in Artificial Intelligence and Robotics
2014	Dipartimento di Ingegneria Informatica, Automatica e Gestionale “Antonio Ruberti” Università degli studi di Roma “La Sapienza”	Seminar during the PhD course “Great Ideas in ICT”
2014	Sapienza University of Rome (Italy)	Laboratorio di informatica
2013	Facoltà di Ingegneria Civile e Industriale	6 CFU Ingegneria Clinica BCLR Professor
2012	Sapienza University of Rome (Italy) Facoltà di Ingegneria dell'Informazione, Informatica e Statistica	Fondamenti di informatica 6 CFU Ingegneria delle Comunicazioni BCOR Ingegneria Elettronica BELR Contract Professor
2011	Sapienza University of Rome (Italy) Facoltà di Ingegneria Civile e Industriale	Programmazione e metodi numerici 5 CFU Ingegneria Aerospaziale BAER Contract Professor
2011	Sapienza University of Rome (Italy) Facoltà di Ingegneria dell'Informazione, Informatica e Statistica	Fondamenti di informatica 6 CFU Ingegneria delle Comunicazioni BCOR Ingegneria Elettronica BELR Contract Professor
2011	Sapienza University of Rome (Italy) Facoltà di Ingegneria Civile e Industriale	Programmazione e metodi numerici 5 CFU Ingegneria Aerospaziale BAER Teaching assistant (Tutor)
2007	Sapienza University of Rome (Italy) Facoltà di Ingegneria Civile e Industriale	Fondamenti di informatica 10 CFU Ingegneria Clinica BCLR Teaching assistant (Tutor)

Awards and Honors

2005 Best Master's thesis in Computer Engineering Award. A.Y. 2004-05 Sapienza University of Rome
("Bando di concorso per la migliore Tesi di Laurea in Ingegneria Informatica nell'A.A. 2004-05")

Funding

2016	Intelligent sport monitoring with automatic extraction of player statistics	Finanziamento per la ricerca di Ateneo per Progetti di Avvio alla ricerca, Sapienza	2000 €
2013	Object recognition through RGBD data	TEE Erasmus Mundus Staff mobility	2500 €
2008	Fusion of heterogeneous sensors data	bando MOBY.D.I.K "Percorsi individuali di mobilità geografica in contesti accademici" regione Basilicata	12000 €
2007	Automatic maritime video surveillance	"Borsa per tirocini scientifici formativi" FILAS (Finanziaria Laziale di Sviluppo) regione Lazio	4200 €

Research Activities

Keywords:
Intelligent surveillance;
Object Recognition;
Data Fusion;
Robot Vision;
Steganography

Currently, as member of the RoCoCo lab, I am involved in research projects concerning different fields of Artificial Intelligent, ranging from multi-robot coordination to semantic mapping. In particular, I am participating to the EU funded projects Flourish (precision agricultural robotics) and Coaches (social robotics). Furthermore, I am the team manager of the SPQR Robot Soccer Team, participating in the Robocup competitions, and I actively collaborate with a medical group about melanoma detection in dermoscopic images.

During my Ph.D. and post-doc research activity, my work explored different aspects of the Computer Vision field. I designed and developed several algorithms for the detection and tracking of objects in video sequences, both with mono and stereo cameras. I studied the problem of data fusion for homogeneous (multiple cameras) and heterogeneous sensors (camera + RFID, camera + infrared, camera + radar) in real-world outdoor and indoor environments. I studied also different approaches for object recognition, creating classifiers for detecting specific objects (boats, aeroplanes) in still images. Moreover, I applied a Computer Vision algorithm for performing steganography in order to send ciphered messages embedded in images. As future directions, I intend to investigate the application of Computer Vision techniques to moving robotic platforms and to intelligent sport monitoring.

Summary of Scientific Achievements

Conferences and Events Organization	2016 Organizer of the 6th Edition of the European Robotics Week Local Event at Dipartimento di Ingegneria Informatica, Automatica e Gestionale “Antonio Ruberti”, Sapienza University of Rome. 2015 Organizer of the 5th Edition of the European Robotics Week Local Event at Dipartimento di Ingegneria Informatica, Automatica e Gestionale “Antonio Ruberti”, Sapienza University of Rome. 2014 Organizer and chairman of the Special Session on Active Robot Vision (WARV 2014) during VISAPP 2014 2009 Session Chair during VISAPP 2009
Journal Reviewer	Pattern Recognition Expert Systems The Journal of Knowledge Engineering Sensors Neurocomputing Computer Vision and Image Understanding Information Fusion Image and Vision Computing IEEE Intelligent Systems AI Communications IEEE Transactions on Circuits and Systems for Video Technology
Conferences and Schools	FUSION 2015 ICTAI 2015 ACIVS 2015 SBMI 2015 VISAPP 2014 (special session organizer and chair) HRI 2014 Workshop “Experimenting in HRI for priming real world set-ups, innovations and products” (invited speaker) Robocup 2013 WSCG 2013 SPME 2013 COMPIMAGE 2012 DHSS 2011 AVSS 2009 VISAPP 2009 (Session Chair) Vision Video and Graphics (VVG) – EPSRC Summer School 2007 Rescue Robotics Camp 2006 IBM EMEA Best Student Recognition Event 2006

List of Publications

- A. Pennisi, D. D. Bloisi, L. Iocchi, "Online Real-time Crowd Behavior Detection in Video Sequences", In *Comput. Vis. Image Underst.*, Elsevier Science Inc., vol. 144, no. C, pp. 166-176, 2016.
- G. Gemignani, D. Nardi, D. D. Bloisi, R. Capobianco, L. Iocchi, "Interactive Semantic Mapping: Experimental Evaluation", *Experimental Robotics*, series Springer Tracts in Advanced Robotics, Springer International Publishing, vol. 109, pp. 339-355, 2016.
- R. Capobianco, G. Gemignani, D. D. Bloisi, D. Nardi, L. Iocchi, "Automatic Extraction of Structural Representations of Environments", Chapter in *Intelligent Autonomous Systems 13*, Springer International Publishing, vol. 302, pp. 721-733, 2016.

- G. Gemignani, R. Capobianco, E. Bastianelli, D. D. Bloisi, L. Iocchi, D. Nardi, "Living with Robots: Interactive Environmental Knowledge Acquisition", *Robotics and Autonomous Systems*, 2016.
- L. Snidaro, L. Vati, J. Garcia, E. D. Martí, A.-L. Jusselme, K. Bryan, D. D. Bloisi, D. Nardi, "A framework for dynamic context exploitation", In 18th International Conference on Information Fusion (*FUSION 2015*), pp. 1160-1167, 2015.
- D. D. Bloisi, A. Grillo, A. Pennisi, L. Iocchi, C. Passaretti, "Multimodal Background Model Initialization", *Chapter in New Trends in Image Analysis and Processing ICIAP 2015 Workshops*, vol. 9281, pp. 485-492, 2015.
- C. Potena, A. Pretto, D. D. Bloisi, D. Nardi, "Plane Extraction for Indoor Place Recognition", *Chapter in Advanced Concepts for Intelligent Vision Systems*, vol. 9386, pp. 530-540, 2015.
- A. Pennisi, F. Previtali, C. Gennari, D. D. Bloisi, L. Iocchi, F. Ficarola, A. Vitaletti, D. Nardi, "Multi-Robot Surveillance through a Distributed Sensor Network", *Chapter in Cooperative Robots and Sensor Networks*, vol. 604, pp. 77-98, 2015.
- A. Pennisi, F. Previtali, D. D. Bloisi, L. Iocchi, "Real-Time Adaptive Background Modeling in Fast Changing Conditions", In *Advanced Video and Signal Based Surveillance (AVSS), 2015 12th IEEE International Conference on*, pp. 1-6, 2015.
- A. Pennisi, D. D. Bloisi, D. Nardi, A. R. Giampetruzzi, C. Mondino, A. Facchiano, "Melanoma Detection Using Delaunay Triangulation", In *IEEE 27th International Conference on Tools with Artificial Intelligence*, pp. 791-798, 2015.
- M. Fiorini, A. Capata, D. D. Bloisi, "On the Maritime Spatial Planning (MSP) to Enhance Safety and Security at Sea", In *International Conference of Advanced Intelligent Maritime Safety and Technology (AiMAST)*, pp. 318-328, 2015.
- D. D. Bloisi, D. Nardi, F. Riccio, F. Trapani, "Context in Robotics and Information Fusion", *Chapter in Boosting Real World Performance with Domain Knowledge*, Springer International Publishing AG, pp. 1-24, 2015.
- D. D. Bloisi, L. Iocchi, D. Nardi, M. Fiorini, "Integrated Visual Information for Maritime Surveillance", *Chapter in Clean Mobility and Intelligent Transport Systems, The Institution of Engineering and Technology (IET)*, pp. 237-264, 2015.
- D. D. Bloisi, L. Iocchi, A. Pennisi, L. Tombolini, "ARGOS-Venice Boat Classification", In *Advanced Video and Signal Based Surveillance (AVSS), 2015 12th IEEE International Conference on*, pp. 1-6, 2015.
- G. Gemignani, D. Nardi, R. Capobianco, D. D. Bloisi, L. Iocchi, "Interactive Semantic Mapping: Experimental Evaluation", In *Experimental Robotics*, 2014.
- R. Capobianco, G. Gemignani, D. Nardi, D. D. Bloisi, L. Iocchi, "Knowledge-Based Reasoning on Semantic Maps", In *Knowledge Representation and Reasoning in Robotics, AAAI Spring Symposium 2014*, 2014.
- A. Pennisi, F. Previtali, F. Ficarola, D. D. Bloisi, L. Iocchi, A. Vitaletti, "Distributed Sensor Network for Multi-Robot Surveillance", In *Procedia Computer Science*, vol. 32, no. 0, pp. 1095-1100, 2014.
- A. Pennisi, D. D. Bloisi, L. Iocchi, D. Nardi, "Ground Truth Acquisition of Humanoid Soccer Robot Behaviour", *Chapter in RoboCup 2013: Robot World Cup XVII*, vol. 8371, pp. 560-567, 2014.
- D. D. Bloisi, A. Pennisi, L. Iocchi, "Background modeling in the maritime domain", *Machine Vision and Applications*, vol. 25, no. 5, pp. 1257-1269, 2014.
- D. D. Bloisi, A. Pennisi, L. Iocchi, "Background modeling in the maritime domain", In *Machine Vision and Applications*, Springer Berlin Heidelberg, pp. 1-13, 2013.
- E. Bastianelli, D. D. Bloisi, R. Capobianco, G. Gemignani, L. Iocchi, D. Nardi, "Knowledge Representation for Robots through Human-Robot Interaction"
- E. Bastianelli, D. D. Bloisi, R. Capobianco, F. Cossu, G. Gemignani, L. Iocchi, D. Nardi, "On-line Semantic Mapping", In *16th International Conference on Advanced Robotics*, 2013.

A. Pennisi, D. D. Bloisi, Claudio Gaz, Luca Iocchi, Daniele Nardi, "Novel Patterns and Methods for Zooming Camera Calibration", *In Journal of WSCG*, vol. 21, no. 1, pp. 59-67, 2013.

A. Pennisi, D. D. Bloisi, L. Iocchi, D. Nardi, "Ground Truth Acquisition of Humanoid Soccer Robot Behaviour", *In Proceedings of the 17th Annual Robocup International Symposium*, pp. 1-8, 2013.

T. M. Bonanni, A. Pennisi, D. D. Bloisi, L. Iocchi, D. Nardi, "Human-Robot Collaboration for Semantic Labeling of the Environment", *In Proceedings of the 3rd Workshop on Semantic Perception, Mapping and Exploration (SPME)*, pp. 1-6, 2013.

D. Bloisi, L. Iocchi, D. Nardi, M. Fiorini, G. Graziano, "Ground Traffic Surveillance System for Air Traffic Control", *In Proceedings of the 12th International Conference on Intelligent Transport Systems Telecommunications (ITST)*, Taipei, Taiwan, pp. 160-164, 2012.

D. Bloisi, L. Iocchi, "Independent Multimodal Background Subtraction", *In Proceedings of the Third International Conference on Computational Modeling of Objects Presented in Images: Fundamentals, Methods and Applications*, Rome, Italy, pp. 39-44, 2012.

D. Bloisi, L. Iocchi, M. Fiorini, G. Graziano, "Camera Based Target Recognition for Maritime Awareness", *In Proceedings of the Fifteen International Conference on Information Fusion (FUSION)*, Singapore, pp. 1982-1987, 2012.

D. Bloisi, L. Iocchi, M. Fiorini, G. Graziano, "Automatic Maritime Surveillance with Visual Target Detection", *In Proceedings of the International Defense and Homeland Security Simulation Workshop (DHSS)*, Rome, Italy, pp. 141-145, 2011.

M. Cristani, M. Farenzena, D. D. Bloisi, V. Murino, "Background Subtraction for Automated Multisensor Surveillance: A Comprehensive Review", *In EURASIP J. Adv. Sig. Proc.*, vol. 2010, pp. 1-24, 2010.

D. D. Bloisi, "Visual Tracking and Data Fusion for Automatic Video Surveillance", PhD thesis, "Sapienza" University of Rome, Department of Computer and System Sciences, Rome, Italy, 2010.

D. D. Bloisi, L. Iocchi, D. N. Monekosso, P. Remagnino, "A Novel Segmentation Method for Crowded Scenes", *In VISAPP09*, pp. 484-489, 2009.

D. D. Bloisi, L. Iocchi, "ARGOS - A Video Surveillance System for Boat Traffic Monitoring in Venice", *In International Journal of Pattern Recognition and Artificial Intelligence*, vol. 23, no. 7, pp. 1477-1502, 2009.

D. D. Bloisi, L. Iocchi, L. Marchetti, D. N. Monekosso, P. Remagnino, "An Adaptive Tracker for Assisted Living", *In IEEE Conf. on Advanced Video and Signal Based Surveillance*, IEEE Computer Society, Los Alamitos, CA, USA, pp. 164-169, 2009.

L. Bazzani, D. D. Bloisi, V. Murino, "A Comparison of Multi Hypothesis Kalman Filter and Particle Filter for Multi-target Tracking", *In Performance Evaluation of Tracking and Surveillance workshop at CVPR*, Miami, Florida, pp. 47-54, 2009.

D. D. Bloisi, L. Iocchi, "Rek-Means: A k-Means Based Clustering Algorithm", *In Computer Vision Systems, 6th International Conference (ICVS 2008)*, pp. 109-118, 2008.

D. D. Bloisi, L. Iocchi, G. R. Leone, R. Pigliacampo, L. Tombolini, L. Novelli, "A Distributed Vision System for Boat Traffic Monitoring in the Venice Grand Canal", *In VISAPP07*, pp. 549-556, 2007.

D. D. Bloisi, L. Iocchi, "Image based Steganography and Cryptography", *In VISAPP07*, pp. 127-134, 2007.

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