Alessio Del Bue



CONTACT INFORMATION

Istituto Italiano di Tecnologia (IIT)
Pattern Analysis and Computer Vision
Visual Geometry and Modelling Lab
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EDUCATION

Queen Mary University of London

Ph.D. Candidate, Computer Science, September 2002 – August 2006

- Dissertation Topic: "Non-rigid 3D Modelling from Uncalibrated Video Sequences"
- Advisor: Lourdes de Agapito Vicente

University of Genova, Italy

M.S., Telecommunication Engineering, April, 2002
B.S., Electronic Engineering, February, 2000

- Master Thesis Topic: "Real time MPEG-4 encoding for smart cameras".
- Advisors: Carlo Regazzoni, Dorin Comaniciu

RESEARCH EXPERIENCE

Istituto Italiano di Tecnologia (IIT)

Senior Researcher Tenured, Director of PAVIS research line **August 2019 - ongoing**
Leading the Pattern Analysis and Computer Vision (PAVIS) research lines of the Istituto Italiano di Tecnologia with a group formed by approximately 32 research staff members (13 Postdocs, 15 Ph.Ds, 2 External collaborators and 2 Technicians) working on Computer Vision, Signal Processing, Machine Learning. The main drive of the department is to research Artificial Intelligence (AI) approaches that can understand spatial arrangement and the dynamic of things (Spatial AI) and decoding the social behaviour of people (Social AI) frpm multi-modal cues.

Senior Researcher Tenured **May 2019 - July 2019**
Head of the Visual Geometry and Modelling (VGM) research lines of the Istituto Italiano di Tecnologia – IIT. The group was formed by approximately 10 research staff working on 3D scene understanding from images and other sensor modalities. Main research topics are related to Computer Vision, Signal Processing, and Artificial Intelligence.

Tenure-track Researcher **May 2014 - April 2019**
Head of the Visual Geometry and Modelling (VGM) Lab at the Pattern Analysis and Computer Vision Department (PAVIS) of the Istituto Italiano di Tecnologia – IIT. The group is formed by 3 postdocs and 3 Ph.D. students working on Computer Vision, Signal Processing and Machine Learning. The main aim of the lab is to deliver top-level research on 3D reconstruction from images, dynamic scene understanding and 3D localisation/detection from audio and video. The VGM Lab has also strong activities in Technology Transfer collaborating with world leader companies in machine vision, avionics, energy and textiles fields.

Team Leader **July 2012 - April 2014**
Team Leader position at the Pattern Analysis and Computer Vision (PAVIS) of the Istituto Italiano di Tecnologia – IIT. The main objectives were the consolidation of the most promising research lines of the group and writing proposals to secure funding for the expansion of the department. A more consistent supervision of students and postdocs was required given the increased size of the department.

Postdoc Senior **February, 2010 - June 2012**
Senior Postdoc position at the Pattern Analysis and Computer Vision (PAVIS) of the Istituto Italiano di Tecnologia – IIT. The main duties were related to a close interaction with the head of the department and team leaders in the setup of the research lines of the newborn group. Other duties were the co-supervision of Ph.D and master students.

Instituto de Sistemas e Robotica (ISR)

Auxiliary Researcher **September, 2006 - January 2010**
Researcher in the Signal and Image Processing Group (SIPG) in Instituto de Sistemas e Robotica (ISR) of Instituto Superior Tecnico (IST). The main research projects were related to non-rigid 3D reconstruction from images and automatic art analysis.

Visiting Professor **May, 2009**
One month Invited Professorship at University Blaise-Pascal, LASMEA laboratory, Clermont-Ferrand, France.

Visiting Researcher **June, 2006 - September, 2006**
Visiting Researcher in the Signal and Image Processing Group in Instituto de Sistemas e Robotica (ISR) of Instituto Superior Tecnico (IST).

Queen Mary University

Temporary Lecturer **September, 2005 - January 2006**
Tutor for the Open Distance Learning (ODL) unit of the Department of Computer Science at Queen Mary University. Responsible for delivering teaching material, coordinate teaching assistants and prepare courseworks/exams material.

Teaching Assistant **September, 2002 - September 2005**
Responsible for assisting the laboratory classes for the first year undergraduate courses of Computer Architecture (DCS111) and Object Oriented Programming (DCS104).

Siemens Corporate Research, Princeton, New Jersey, USA

Internship **February, 2001 - September, 2001**
Research and development of a real-time face tracking system with MPEG-4 selective compression. Study of the Mean Shift paradigm for temporal video analysis. Supervision of Dr. Dorin Comaniciu.

Industrial Projects and Technology Transfer

Camozzi-Marzoli joint lab **January 2019 — January 2022**
The project aims at developing Artificial Intelligence approaches for Yarn quality inspection to improve and optimise the textile industrial production.

Ansaldo **January 2018 — June 2021**
The project aims to further automatise the procedure for inspection inside gas turbines using digital tools and AI methods for crack inspection of tiles.

Luxottica **January 2018 — December 2020**
This industrial project targets the eyewear industry to provide a visual inspection system for defect detection and geometric check of eyewear with different materials and styles.

Brunello Cucinelli **September 2017 — November 2018**
This collaboration project targets the luxury fashion industry to provide a visual inspection system for defect detection and geometric check of textiles with very complex patterns.

Ansaldo Energia **January 2017 — December 2017**

The project is related to the visual inspection of gas chamber turbines to assess with machine learning methods the state of degradation of the internal parts of the turbine.

Omron Research **May 2014 — October 2018**

This long-standing collaboration between the Japanese company OMRON, a world leader for machine vision automation, and IIT is related to research and develop methods for active vision in robotic platforms.

AvioAero **May 2014 — March 2016**

This project on aeronautic parts inspection was dedicated to the analysis of external and inner components of gearboxes using an endoscope.

Research Grants and Awards

2021-2025: H2020 FET European Project "Reconstructing the Past: Artificial Intelligence and Robotics Meet Cultural Heritage"(RePAIR), IIT is a partner.

2020 - Project PROHOME in collaboration with Liguria region and Galliera hospital, Co-PI.

2019 - 2022: H2020 RIA European Project "MEMories and EXperiences for inclusive digital storytelling" (MEMEX), Coordinator.

2019 - Best student paper award at the 20th International Conference on IMAGE ANALYSIS AND PROCESSING (ICIAP 2019)

2018 - Best paper award at the IEEE international Image Processing Applications and Systems conference (IPAS 2018)

2015 - Best poster award at ICCVW 1st International Workshop on Recovering 6D Object Pose.

2015 - Best reviewer award at IEEE CVPR conference

2015 - 2018: Marie Sklodowska-Curie actions – Innovative Training Networks (ITN), SCENEUNDERLIGHT: Time-lapse understanding of the static and human scene and its lighting.

2014 - Best reviewer award at IEEE CVPR conference

2009 - 2012: FCT grant PTDC/EEA-CRO/098822/2008, "PrintArt – Content and Ontology based art image annotation and retrieval".

2009 - one month Invited Professorship at University Blaise-Pascal, LASMEA laboratories, Clermont-Ferrand, France.

2006 - 2009: FCT grant PTDC/EEA-ACR/72201/2006, "MODI – 3D Models from 2D Images".

2005 - Royal Academy of Engineering international travel grant.

2004 - Royal Academy of Engineering international travel grant.

2004 - Conference publication selected among the best papers - ACCV

2004 - Workshop publication selected among the best papers - CVPRW

2003 - 2006: Queen Mary College Ph.D. Scholarship.

2002 - Master Thesis awarded with "Dignita di Stampa" by the Engineering Council of University of Genova.

2001 - Travel grant awarded for an exchange internship program with Siemens Corporate Research (Princeton, USA).

Supervised Postdocs

From October 2019: Ertugrul Bayraktar

From October 2019: Shah Nawaz

From August 2019: Pietro Morerio

From August 2019: Jacopo Cavazza

From August 2019: Cigdem Beyan

From September 2018: Yiming Wang.

From April 2017: Stuart James.

January 2016 - January 2018: Paul Gay.

March 2015 - March 2017: Ludovic Magerand.

February 2015 - February 2016: Seyed Reza Ahmadzadeh (in collaboration with Lorenzo Natale).

May 2014 - March 2017: Marco Crocco.

November 2013 - January 2015: Roberto Mecca.

From March 2013: Enrique Munoz Corral.

Supervised Ph.D. Students

From October 2019: Giancarlo Paoletti (Supervisor), "Deep unsupervised methods".

From October 2019: Seyed Saber Mohammadi (Supervisor), "3D scene understanding from point-clouds".

From October 2019: Mohammad Zohaib (Supervisor), "3D object detection from multiview images"

From October 2019: Shafiq Ahmad. "People re-identification from video"

From October 2017: Mohamed Dahy Abdelaher Elkhouly (Supervisor), "Multi-view semantic reasoning".

October 2016 - March 2020: Vaibhav Basal (Supervisor), "Object-based Geometric reasoning".

January 2014 - January 2017: Silvia Colabrese (Supervisor), "Machine Learning for Super-Resolution Microscopy".

January 2013 - March 2016: Cosimo Rubino (Supervisor), "Semantic reconstruction of indoor and outdoor scenes".

January 2012 - January 2015: Moin Nabi (co-supervisor), "Group activity detection and recognition".

January 2011 – November 2011: Simona Ullo (co-supervisor), "Joint functional and structural modelling of neuronal networks".

From February 2010: Reza Sabzevari (Supervisor), "Piecewise Methods for Dense 3D reconstruction".

June 2009 – September 2009: Francesco Setti, Visiting Ph.D. student. Articulated Modelling from Stereo (2009).

February 2009 – June 2009: Luca Zappella, Visiting Ph.D. student. Simultaneous 3D reconstruction and segmentation from images.

June 2008 – September 2008: Dawei Liu, Visiting Ph.D. student. Super-resolution with Image Warps.

February 2008 – July 2008: Marco Paladini, Visiting Ph.D. student, "Factorization for Non-Rigid and Articulated Structure using Metric Projections".

Supervised Master Students

April 2017 – October 2017: Nail Ibrahimli, "Evaluation of dense SLAM algorithms"

March 2012 – June 2012: Igor Barros Barbosa, "Re-identification with Kinect".

April 2011 – June 2011: André Grilo, "Fast and efficient segmentation via sparse mean shift".

July 2011 – August 2011: Cosimo Rubino, "A pipeline for the dense 3D reconstruction of asteroids".

March 2007 – August 2007: Joao Fayãd, "Articulated Three-Dimensional Human Modelling from Motion Capture Systems".

Organised Local and International Events

2020 August – Co-organiser of the "Fifth International Workshop on Computer VISion for ART Analysis", in conjunction with the European Conference On Computer Vision (ECCV 2020), Glasgow, UK.

2020 September – Co-organiser of the "2nd Workshop on Applications of Egocentric Vision (EgoApp)", in conjunction with ICPR 2020, Milan, Italy.

2018 September – Tutorial Chair of the "International Conference on 3D Vision (3DV 2018)", Verona, Italy.

2018 September – Co-organiser of the "Fourth International Workshop on Computer VISion for ART Analysis", in conjunction with the European Conference On Computer Vision (ECCV 2018), Munich, Germany.

2017 June – Co-organiser of the "Non-Rigid Structure from Motion Challenge 2017", in conjunction with the IEEE Computer Vision and Pattern Recognition (CVPR) conference, Honolulu, Hawaii.

2016 October – Co-organiser of the "Third International Workshop on Computer VISion for ART Analysis", in conjunction with the European Conference On Computer Vision (ECCV 2016), Amsterdam, Netherlands.

2016 March - "Tutorial on 3D Room Reconstruction from Sound", ICASSP 2016, Shangai, China.

2015 September – Tutorial chair of the "Eight International conference on Image Analysis ans Processing (ICIAP 2015)", Genova, Italy.

2014 September – Co-organiser of the "Second International Workshop on Computer VISion for ART Analysis", in conjunction with the European Conference On Computer Vision (ECCV 2014), Zurich, Switzerland.

2012 October – Co-organiser of the "First International Workshop on Computer VISion for ART Analysis", in conjunction with the European Conference On Computer Vision (ECCV 2012), Firenze, Italy.

2012 October – Co-organiser of the "3^{rd} PAVIS School on Computer Vision, Pattern Recognition, and Image Processing", Sestri Levante, Italy.

2011 November – Organiser of the tutorial on "non-rigid registration and reconstruction" at the International Conference of Computer Vision (ICCV 2011), Barcelona, Spain.

2011 June – Co-organiser of the "Fourth Workshop on Non-Rigid Shape Analysis and Deformable Image Alignment (NORDIA'11)" at the IEEE Conference on Computer Vision and Pattern Recognition (CVPR 2011), Colorado Springs, USA.

2011 May – Co-organiser of the "tutorial on Computer Vision in a Non-rigid World" at Scandinavian Conference on Image Analysis (SCIA 2011), Ystad Saltsjobad, Sweden.

2011 March – Co-organiser of the "2^{nd} PLUS Advanced School on Computer Vision, Pattern Recognition, and Image Processing", IIT, Italy.

2010 December – Organiser of the "2^{nd} tutorial on Computer Vision in a Non-rigid World", IIT, Genova, Italy.

2010 July – Co-organiser of the "10 PLUS-VIPS Advanced School on Computer Vision, Pattern Recognition, and Image Processing", Sestri Levante, Italy.

2010 May – Website Chair of the "Fifth International Symposium on 3D Data Processing, Visualization and Transmission (3DPVT 2010)", Paris, France.

Patents

2017 - Del Bue A., Galasso F., Tsemelis T., Cristani M., Hasan I., "A method of view frustum detection, corresponding system and computer program product", PCT/IB2017/056244.

2017 - Del Bue A., Galasso F., Tsemelis T., Cristani M., Hasan I., "A method of identifying light sources, corresponding system and computer program product", PCT/IB2017/056246.

2016 - Method for self-calibration of a set of sensors, in particular microphones, and corresponding system, Application number US14122418 (granted).

2012 – Method for self-calibration of a set of sensors, in particular microphones and corresponding system.

2011 – M. Crocco, A. Del Bue and V. Murino, Procedimento di auto-calibrazione di un insieme di sensori, in particolare microfoni, e relativo sistema.

2007 – D. Comaniciu, A. Del Bue and V. Ramesh, Real-time video object generation for smart cameras. Application/Serial Number: 10/325,413.

Publications

Google Scholar: `https://scholar.google.com/citations?user=LUzvbGIAAAAJ`

DBLP address: `http://dblp.uni-trier.de/pers/hd/b/Bue:Alessio_Del`

ORCID ID: `http://orcid.org/0000-0002-2262-4872`

Journal Editing and Reviewing

2018 (ongoing) - Associate Editor of Springer Pattern Recognition Journal
2019 (ongoing) - Associate Editor of Springer Computer Vision and Image Understanding

Reviewer for the following Journals:

- IEEE PAMI – Transactions on Pattern Analysis and Machine Intelligence.
- Springer IJCV – International Journal of Computer Vision.
- ACM ToC, Transactions on Graphics.
- IEEE TIP – Transactions on Image Processing.
- Springer JMIV – Journal of Mathematical Imaging and Vision.
- IEEE TRO – Transactions on Robotics.
- IEEE Journal of Oceanic Engineering
- Springer IVC – Image Vision and Computing.

- IEEE SMCB-B – Transactions on Systems, Man and Cybernetics - Part B.
- Springer PRL – Pattern Recognition Letters.
- Springer SR – International Journal on Social Robotics.
- MDPI Sensors.
- IEEE JoE, Journal of Oceanic Engineering,



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