UMBERTO CASTELLANI

Curriculum vitae et studiorum

GENERAL DATA:

- Date and place of birth: 28 May 1973, Verona - Italy.
- Citizen: italian.
- Address: Via Rotaldo 8, 37123 Verona.
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MEMBERSHIP:

- VIPS lab, University of Verona (`http://vips.scienze.univr.it`)
- Eurographics (European Association for Computer Graphics) (`http://www.eg.org`)
- CVPL (Italian Association for Computer Vision, Pattern Recognition and Machine Learning) (`https://www.cvpl.it`)

EDUCATION:

March 2003: Dottorato di Ricerca in Informatica (PhD) from University of Verona. Title of PhD thesis: "*Image Based Modelling: from sensory data to 3D models*". Supervisor: Prof. Vittorio Murino. Co-Supervisor: Prof. Andrea Fusiello

October 1999: Laurea degree in Computer Science from University of Verona. Title of master thesis: "*Image processing based on probabilistic approach: Markov Random Field for the restoration of stereo images"*. Supervisor: Prof. Vittorio Murino. Co-supervisor: Prof. Andrea Fusiello

POSITIONS:

- from March 2024: Full Professor at University of Verona (SSD INFO-01/A).
- July 2017 - February 2024 : Associate Professor at University of Verona (SSD INF-01).
- January 2005 - June 2017: Assistant Professor at University of Verona (SSD INF-01).
- July - December 2004: Post-doc at the Computer Science Department of University of Verona.
- November 2002 - June 2004: research contract at the Computer Science Department of University of Verona, working for the EU-Project ARROV.
- October - December 2001: Research Associate at University of Edinburgh, working for the EU-Project CAMERA under the supervision of Prof. Bob Fisher.
- November 1999 - October 2002: grant to attend the PhD course at the Computer Science Department - University of Verona.

RESEARCH KEYWORDS:

- *Computer Vision/Computer Graphics:* 3D analysis and modelling, 3D registration, segmentation, structure from motion, 3D recontruction, spectral shape analysis, functional correspondences, soft-body simulation.
- *Machine learning:* generative models, neural network, support vector machine, metric learning, hidden Markov models, local kernels.
- *Other application:* Augmented reality, gamification, 3D object retrieval, vision in underwater environment, 3D shape banckmark, 3D body modelling, cloth animation, medical image analysis.

GRANTS:

Academic grants

- Feb 2025 - Jan 2027, "*INDICE- Digital Innovations for the Cultural and Creative Industries*". FESR 2021-2027. Co-investigator.
- Oct 2023 - Sept 2025, "*Automatic Reconstruction and Interactive simulation of non-rigid shape for computer-aided cloth design (I-CLOTH)*". Progetti di ricerca di Rilevante Interesse Nazionale (PRIN) 202273Z7PZ. Principal Investigator.
- Jan 2020 - Sept 2026 "*The Roman Emperor Seen from the Provinces (RESP)*", EU contract No. 101002763. Role: Lead of computer science research.
- Jan 2018- Dec 2021,"*Smart Autonomous Robotic Assistant Surgeon (SARAS)*", EU contract No. 779813. Co-investigator.
- Oct 2013 - Dec 2018,"*Personalised Prognostic Tools for Early Psychosis Management (PRONIA)*", EU contract No. 602152. External-investigator.
- September 2014, "*Partially supervised learning: background and application*", CooperInt project. Principal Investigator.
- March-April 2013,"*3D scene completion and understanding from partial-views (3DCUP)*", CooperInt project. Principal Investigator.
- September 2012,"*Probabilistic Local Multiple Kernel Lerning (PROLOKE)*", CooperInt project. Principal Investigator.
- September 2011-2013, "*Brain Diffusion Imaging and Fiber Tracking for Radiotherapy and Surgical Planning*"(BRAINFIT), MIUR Project. Co-investigator.
- January 2008 - September 2011, "*Similarity-Based Pattern Analysis and Recognition* "(SIMBAD), EU contract No. 213250. Co-investigator.
- January 2008 - March 2010,"*2D and 3D image registration of rigid and non-rigid scenes*", CooperInt project. Principal Investigator.
- February 2007 - January 2009, "*Three-Dimensional Shape Indexing and Retrieval Techniques*" (3-SHIRT). MIUR project. Co-investigator.
- January - December 2007, "*Medical image analysis for mental health research*", Project of Interuniversity Consortium. Principal Investigator.
- January- December 2007 "*3D Registration of deformable models*", Young Research Project of University of Verona. Principal Investigator.
- March 2003 - November 2005, "*Low cost 3D imaging and modelling automatic system*" (LIMA3D), MIUR Project. Co-investigator.
- December 2000 - February 2005, "*Augmented Reality for Remotely Operated Vehicles based on 3D acoustical and optical sensors for underwater inspection and survey*"(ARROV), EU contract No. GRD1-2000-25409. Co-investigator.

- May 2001 - April 2002, "*Simulations for Audio and Video Augmented Reality*"(SAVAR), Young Research Project of University of Verona. Principal investigator.
- August 2001 - December 2001, "*CAd Modelling of Built Environments from Range Analysis* "(CAMERA), EU contract No. FMRX-CT970127. Co-investigator.

Industrial grants

- Dec 2023 - Nov 2025 "*VVV - Voglio Vedere Verde*", Fondazione Cariverona, Co-investigator.
- Jan 2024 - July 2024 "*Deep matching for structure and motion (DEMO)*", 3Dflow company. Principal Investigator.
- July 2023 - Jan 2024 "*Advanced visual inspection*", AIVIZ company. Principal Investigator.
- March 2021-July 2022 "*Gamification for an innovative exploration of cultural heritage in Verona* ", Comune di Verona. Principal investigator.
- Feb 2019 - Jan 2021 "*Procedural generation of urban environment*", Antemotion. Principal investigator.
- Sept 2019 - Aug 2021 "*Sky System: a procedural system for sky generation*", Milestone. Principal investigator.
- Nov 2018 - Sept 2020 : "*Automatic extraction of anthropometric measurements from digital 3D scan of human bodies*", Igoodi. Principal investigator.
- Feb 2016 - April 2017: "*3D image acquisition by photometric stereo* (3DPhoto)", 3Dflow. Principal investigator.
- Jan-Dec 2016 "*3D reconstruction from stereo images using linear cameras*(STSL)", eVS. Principal investigator.
- March 2014 - Feb 2015 "*Content based image retrieval for fashion archives*", Openinnovation. Principal investigator.
- Dec 2013 - April 2015 "*Efficient tracking from challenging images: B-Quant*", eVS. Co-investigator.
- Jan-Dec 2013 "*Advanced medical image acquisition and analysis*", MEDEA-IRCS. Principal investigator.

ACADEMIC ACTIVITIES:

Teaching activities

- Graphics Programming (AA 2020-21 — AA 2023-24).
- Computer Vision (AA 2012-13 – AA 2023-24).
- Digital Design (AA 2021-22 – 2022-23).
- Multimedia production (AA 2010-11 – AA 2020-21).
- Image and Volume data Analysis (AA 2019-2020).
- Human Computer Interaction (AA 2009-10 and AA 2018-19).
- Computer Science for Cultural Heritage (AA 2008-09).
- Mathematical methods in image processing and shape analysis - seminar course (AA 2013-14).

University services

- Director of the Master in *Computer Game Development* (2012-today).
- Member of AQ committee of Computer science department (2016-today).

- Researcher representative of Computer science department (2010-2012).
- Member of Computer Science PhD Committee.
- Member of scientific committee of the Master in *Computer Game Development*.

SUPERVISION

- Federico Masi, Post-laurea (Dec 2024 - today).
- Davide Garavaso, Post-laurea (Dec 2023 - today).
- Marcello De Vincenzi, Post-laurea (Mar 2024 - Sept 2024).
- Davide Furlani, Post-laurea (Dec 2023 - Jan 2025).
- Pietro Musoni, postDoc (Feb 2023- Jan 2024).
- Riccardo Bartolomioli, Post-laurea (Jan 2023 - Sept 2024).
- Sebastiano Fregnan, Post-laurea (Jan 2023 - Dec 2023).
- Pietro Musoni, PhD student (Oct 2019- Dec 2022).
- Raffaele Berardo, Post-laurea (Oct 2021 - July 2023).
- Alberto Falezza, Post-laurea (Oct 2021 - July 2023).
- Andrea Peretto, Post-laurea (Oct 2019-Sept 2020).
- Marco Comencini, Post-laurea, (March 2019- Feb 2021).
- Simone Melzi, Post-doc (Nov 2017- Oct 2019).
- Riccardo Marin, Phd student (Oct 2017- today).
- Simone Melzi, Phd student (Nov 2014-Oct 2017).
- Marco Schivi, Post-laurea, (Nov 2016 - Dec 2017).
- Luca Magri, Post Doc, (Dicembre 2015-Aprile 2017).
- Letizia Squarcina, Post Doc, (Feb 2014- Jan 2017).
- Federico Recchia, Post-laurea, (Feb 2016- Jan 2017).

PROFESSIONAL SERVICE:

- Member of the editorial board of the Pattern Recognition journal (2016-2025).
- Member of the Executive Board of Eurographics Italian Chapter (2012-2015).
- Program Chair of International conference on 3D Vision (3DV) 2018.
- Co-Chair of the ICCV Workshop on Multiview Relationships in 3D Data (MVR3D) 2017.
- Publicity/Web Chair of Image Analysis and Processing Image (ICIAP) 2015.
- Co-Chair of the ECCV Workshop on Non-Rigid Shape Analysis and Deformable Image Alignment (NORDIA) 2014.
- General Chair of the Eurographics Workshop on 3D Object Retrieval (3DOR) 2013.
- Co-Chair of the ECCV Workshop on Non-Rigid Shape Analysis and Deformable Image Alignment (NORDIA) 2012.
- Co-Chair of 3D Shape Retrieval Contest SHREC 2010.
- Co-Chair of Eurographics Italian Chapter 2009.
- Area-chair of the British Machine Vision Conference (BMVC) 2016.

- In 2015 and 2016 he participated as invited member at the PC-meeting for the Medical Image Computing and Computer Assisted Intervention Conference (MICCAI).
- Member of Program Committee of Eurographcs 26-19; STAG 25-20, SGP Phd School 19; 3DOR 25-11; MICCAI 16-15, SIMBAD 15,13,11; 3DV 18,16,15,14; Web3D 15; ACCV 16,14,13,12,10; 3DIMPVT 13-11; Eurographics Short Paper 12; QU3ST 12; PCP 12; SCIA 11; ACIVS 08-09-10; NORDIA 14-09.
- Reviewer of the following international journals: IEEE Transaction on Pattern Analysis and Machine Intelligence; International Journal of Computer Vision; Computer Graphics Forum; Computer and Graphics; Artificial Intelligence in Medicine; IEEE Journal on Oceanic Engineering; IEEE Transaction on System, Man, and Cybernetics; IEEE Transaction on Robotics; IEEE Transaction on Image Processing; IEEE Multimedia; IET Computer Vision; Computer Vision and Image Understanding; Image and Vision Computing Journal; Pattern Recognition Letters; Pattern Recognition; International Journal of Pattern Recognition and Artificial Intelligence; Pattern Analysis and Applications; Journal of Electronic Imaging; Electronic Letters on Computer Vision and Image Analysis; The Visual Computer; Numerical Mathematics: Theory, Methods and Applications.
- Reviewer of the following international conferences:CVPR 24-05; Eurographics 23, 22, 19, 16, 15, 14; ICCV 21, 17, 15, 11, 09, 07, 05; ICIP 16, 15, 14, 13, 12, 11, 10, 09, 08, 07, 06, 05; Pacific Graphics 15; MICCAI 14; ECCV 20, 16, 12, 10, 08, 06, 04; BMVC 08, 07, 06; ICPR 12, 10, 08, 06; 3DIM 11, 09, 07; MIRAGE 09, 07, 05; AMDO 08, 06; ICIAP 11, 09, 07, 05; VISAPP 07; AIME 09, 05.

INVITED TALKS

- *Analysis and simulation of clothed humans*. University College London (UK), 7 August 2025. Invited by Prof. Niloy Mitra.
- *3D shape analysis for matching, modelling and classification*. University of Milan, 14 March 2017. Invited by Prof. Alessandro Rizzi.
- *Heterogeneous data integration and normalization for psychosis characterization*. Italian Institute of Technology (IIT), 22 September 2016. Invited by Prof. Vittorio Murino.
- *Brain classification with heterogeneous data for psychosis characterization*. Relazione invitata nell'ambito del MICCAI Programme Committee Workshop, 27 Maggio 2016. Invited by Prof. Sebastien Ourselin.
- *3D shape matching by bag-of-features descriptors*. University of Padova, 30 October 2014. Invited by Dott.ssa Ombretta Gaggi.
- *Machine learning techniques embodying imaging, psychopathological and clinical features for classification of pathologies*. Minisymposium on Neuroimaging in psychiatry, Engineering in Medicine and Biology (EMBC), 26 Agosto 2015. Invited by Prof. Paolo Brambilla.
- *Metodi automatici di decisione per il supporto alla diagnosi di pazienti con psicosi*. University of Udine, 25 November 2013. Invited by Prof. Paolo Brambilla.
- *3D analysis and classification*. University of applied sciences Western Switzerland (CH), 23 July 2013. Invited by Prof. Henning Muller.
- *Exploiting geometry in Counting Grids*. University of Lugano (CH), 13 June 2013. Invited by Prof. Michael Bronstein.
- *Statistical 3D Shape Analysis by Local Generative Descriptors*. University College London (UK), 15 March 2013. Invited by Prof. Niloy Mitra.
- *Brain Morphometry by Probabilistic Latent Semantic Analysis*. University d'Auvergne (France), 25 January 2011. Invited by Prof. Adrien Bartoli.
- *Brain Morphometry by Probabilistic Latent Semantic Analysis*. Fondazione Bruno Kessler (FBK) Trento, 26 October 2010. Invited by Paolo Avesani.
- *Exploiting BoW paradigm for 3D Shape Description and Matching*. Siam Conference on Imaging Science (IS10), Chicago 15 March 2010. Invited by Alex and Micheal Bronstain.

- *Pattern recognition techniques for shape modelling and matching*. CNR Pisa, 1 July 2009. Invited by Roberto Scopigno.
- *Medical image classification: the cases of cancer area characterization and brains in Schizophrenia research*. Technichen Universitat of Munchen, 31 March 2009. Invited by Prof. Nassir Navab.
- *Robust deformation capture from temporal range data for surface rendering*. DIKU Copenhagen, 24 March 2009. Invited by Prof. Soren Olsen.
- *3D shape modeling and matching: vision in underwater environment and shape matching using a statistical learning approach*. Purdue University, 4 August 2008. Invited by Johnny Park.
- *Some activities at the VIPS lab: 3D shape matching using Hidden Markov Models and Geo-located image analysis*. Carnegie Mellon University, 23 July 2008. Invited by Alyosha Efros.
- *Recent advances on 3D shape modelling: an overview with a focus on 3D face recognition systems*. Michigan State University, 12 July 2008. Invited by Prof. Anil K. Jain.
- *3D acoustic image processing for underwater visual inspection and navigation*, Università Blaise Pascal, Clermont Ferrand, 07 Feb 2007. Invited by Adrien Bartoli.

JOURNEYS

- July - August 2023: *Visiting Professor* New York University (USA), with Prof. Daniele Panozzo.
- Oct - Nov 2015 (15 days): *Invited Professor* University d'Auvergne (France), with Prof. Adrien Bartoli.
- Feb - March 2013 at the University College London (UCL) - with Prof. Niloy Mitra.
- June-July 2012 at the Istituto Italiano di Tecnologia (IIT) - with Prof. Vittorio Murino.
- November 2010 at the ISIT - University d'Auvergne (France) with Prof. Adrien Bartoli.
- June-July 2008 at the Michigan State University (USA) with Prof. Anil K. Jain.
- Feb and April 2007 at the Universit'a Blaise Pascal in Clermont Ferrand (France) with Prof. Adrien Bartoli.
- Aug-Dec 2001 at the University of Edinburgh with Prof. Bob Fisher.

PUBLICATIONS:

Special issues edited

S.1 The Visual Computer, Special Issue on 3D Object Retrieval 2013, with Silvia Biasotti, Iannis Pretikakis and Tobias Schreck (guest editors).

Edited Proceedings

E.1 Proceedings of International Conference on 3D Vision (3DV), with Andrea Fusiello,Tomas Pajdla, Yoichi Sato, Alla Sheffer - Publisher: IEEE.

E.2 Proceedings of the Workshop Multiple View Relation in 3D data 2017 (MVR3D), with Tolga Birdal, Emanuele Rodola, Andrea Torsello, Slobodan Ilic, Gul Varol - Publisher: Springer.

E.3 Proceedings of the Workshop Non-Rigid Shape Analysis and Deformable Image Alignment 2014 (NORDIA), with Alex Bronstein and Maks Ovsjanikov - Publisher: Springer.

E.4 Eurographics Symposium Proceedings of 3D Object Retrieval 2013 (3DOR), with Silvia Biasotti, Iannis Pretikakis, Tobias Schreck, Afzal Godir, and Remco Vetkamp- Publisher: Eurographics.

E.5 Proceedings of the Workshop Non-Rigid Shape Analysis and Deformable Image Alignment 2012 (NORDIA), with Alex Bronstein, Micheal Bronstein and Stefano Beretti - Publisher: Springer.

An updated list of publication is available here: (http://www.di.univr.it/?ent=persona&id=32&lang=en#tab-pubblicazioni)

Verona, October 27, 2025

In Fede

Umberto Castellani