

PERSONAL INFORMATION

Michele Zanin

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Gender Male | Date of birth 15 November 1974

Nationality Italian



WORK EXPERIENCE

Feb. 2014 – Present

Head of Vision Engineering Department



Brevetti C.E.A. Spa (manufacturing machines for fully automatic inspection of injectable pharmaceutical products). <http://www.brevetti-cea.com>
Via del Commercio, 28 - Sovizzo (VI), Italy

- Leader of VED (Vision Engineering Department) team. A team of computer vision engineers, whose goal is to design all vision-based inspection stations of a Brevetti C.E.A. machine. From initial feasibility study, to final validation, selecting the right illumination principle, camera position, framerate, lens, field of view, designing and implementing solid vision algorithms, fully integrated into the machine software stack.
- Resources planning and activities scheduling, meeting strict time and cost constraints.
- Facilitating cooperation and communication between VED and other company teams, e.g. General Management, Project Managers, Electrical and Automation, Mechanical Design, Final Tests, Service, Sales, Quality.
- Ideation of innovative vision-based inspections, both from hardware point of view (lights, camera position, mechanical compatibility) and from software point of view (algorithm development, optimization, integration).
- Direct interaction with customers, when a strong technical support is needed, potentially during all phases of the manufacturing process (feasibility studies, machine definition, machine construction and testing, FAT, SAT, production, troubleshooting).
- Systematization and documentation of internal software repositories, following the strict quality standards required by the pharmaceutical industry.

Sep. 2013 – Feb. 2014

Freelance ICT consultant

Freelance consultant for private companies. Short term projects, mainly about Augmented Reality, environmental engineering, development for mobile platforms (Android and iOS).

Jul. 1999 – Dec. 2012

Researcher

FBK-irst (former ITC-irst) – Technologies of Vision team. <http://tev.fbk.eu>
Fondazione Bruno Kessler - Ricerca scientifica e tecnologica
Via Sommarive, 18 - Povo (TN), Italy

- Work Package 4 leader and General Secretary of *VENTURI* EU project (FP7-ICT-2011-7, STREP, 8 partners, FBK is coordinator): scene understanding and multimedia data extraction for innovative mobile Augmented Reality applications.
- Leader (for FBK) of *GeoMedia* FESR project: augmenting videos with geographically relevant information, creating tools for robust integration of automatically extracted data into manually labeled streams (collaboration with external company InterPlay Software).
- Proposer and leader (for FBK) of *RISOLVI* regional project: vision algorithms for quality inspection in an industrial environment (collaboration with external company DeltaMax Automazione).

- Wrote FBK contributions to regional project proposals *RISOLVI* (PAT Lp6, with Deltamax Automazione, funded), *CAFE* (FESR, with InterPlay Software and Chartagena, funded), and *FitCity* (FESR, with InterPlay Software and Okkam, funded).
- Leader (for TeV) of *APSAT-Alpinet* regional project: orientation and 3D modeling from markerless terrestrial images.
- Thesis supervisor of Lorenzo Porzi (Oct 2011 – Mar 2012), Mattia Broilo (Jul 2004 – Mar 2005), and Nicola Peroni (Nov 2003 – Mar 2004).
- Ideation and preparation of EU proposals *VENTURI* (FP7-ICT-2011-7, STREP, 8 partners, funded), *SAVOIR* (FP7-ICT-2009-6, IP, 17 partners, not funded) and *GATHERER* (FP7-ICT-2009-5, STREP, 8 partners, not funded): contribution to coordination of the whole consortium; Work Package leader.
- Leader of *BAS* project: adapting EagleEye-based Marmota technologies in order to deal with pictures taken in the Antarctic (collaboration with British Antarctic Survey Research Centre).
- Main developer and one of the proposers/leaders of *Marmota*, an explorative project about fusion of geographical information with visual data automatically extracted from public available photos and webcams.
- Computer Vision expert at Neuroinformatics Laboratory (NILaB), investigating Diffusion Magnetic Resonance Imaging (DMRI) techniques and algorithms.
- *My-e-Director 2012* EU project: design, development and testing of computer vision techniques for sport activity analysis.
- Main developer of *OBLO* project: design, implementation, integration and testing of vision algorithms for glass quality inspection in an industrial environment (collaboration with external company Virmax).
- *SCOCA* Mobile project: development and implementation of a vision-based traffic monitoring system installed on a mobile station.
- *DIPLODOC* (DIstributed Processing of LOcal Data for On-line Car services) project: design, development and testing of computer vision techniques applied to Intelligent Transportation Systems and Intelligent Vehicles.
- *TAS* (Traffic Analysis System) project: identification and automatic extraction of visual characteristics of road traffic that are related to dangerous situations.
- *VisMac2004*: Scientific Secretariat of national GIRPR school “*La Visione delle Macchine 2004*”, Nov 8-12, 2004, Trento
- *WebValley* 2001-2002-2003: lecture “*Compressione immagini e video*” (Image and video compression).
- *SCOCA* project: counting, classifying and tracking vehicles at road intersections by computer vision techniques.
- Main developer of *Viabilità* project: design, development and testing of a traffic queue detector and classifier.

Jul. 2003 – Oct. 2003

Visiting Student

Massachusetts Institute of Technology (MIT)
Center for Biological and Computational Learning CBCL
Cambridge, Massachusetts USA

- Automatic understanding of images of street scenes, with special emphasis on the categorization of objects, such as vehicles, pedestrians, trees, etc., by using machine-learning techniques.
- Feature extraction and implementation of algorithms for automatic feature selection.

EDUCATION AND TRAINING

2002 – 2006 **PhD - Thesis title: "Vision-based road recognition and obstacle detection for intelligent vehicles"**  ISCED 6

University of Trento, Italy
International Graduate School in Information and Communication Technologies (ICT)

1994 – 2000 **Laurea degree in Computer Science Engineering, 100/100 e lode**  ISCED 5A

Alma Mater Studiorum - University of Bologna, Italy
Engineering Faculty

Thesis title: "*Tecniche di visione artificiale applicate al controllo del traffico: rilevamento di code e conteggio classificato di veicoli*"

Summer Schools and other Trainings

- May-September, 2016 *Variety Reduction Program*. ConSidi.
January-March, 2016 Scuola di Leadership. Studio Bicego.
2015-2016 Introduction to *Good Manufacturing Practice (GMP)* and *Good Automated Manufacturing Practice (GAMP)*. CSV Life Science.
April 19-23, 2010 9th Advanced School on Computer Vision, Pattern Recognition and Image Processing, titled *Numerical Geometry on Non-Rigid Shapes*. University of Verona, Italy.
June 9-13, 2003 5th Short Course on *Dynamic Traffic Flow Modelling and Control*. Technical University of Crete. Chania, Greece.
August 13-17, 2001 *Image and Video Compression: Fundamentals, Standards, and Applications*. Portland State University. Portland, Oregon USA.
October 23-27, 2000 Scuola Nazionale IAPR-IC *La Visione delle Macchine 2000*. University of Modena, Gruppo Italiano Ricercatori in Pattern Recognition (GIRPR). Modena, Italy

PERSONAL SKILLS

Mother tongue Italian

Other languages	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	C2	C2	C2	C2	C2
Spanish	A2	A2	A2	A2	A1

Levels: A1/A2: Basic user - B1/B2: Independent user - C1/C2: Proficient user
[Common European Framework of Reference \(CEF\) level](#)

ADDITIONAL INFORMATION

Publications

- Journals
- S. Messelodi, C. M. Modena, M. Zanin, F. G. D. Natale, F. Granelli, E. Betterle, and A. Guarise, “Intelligent extended floating car data collection,” *Expert Systems with Applications*, vol. 36, no. 3, pp. 4213–4227, Apr. 2009
 - S. Messelodi, C. M. Modena, and M. Zanin, “A Computer Vision System for the Detection and Classification of Vehicles at Urban Road Intersections,” *Pattern Analysis and Applications Journal*, vol. 8, no. 1-2, pp. 17–31, Sept. 2005
- International Conference Proceedings
- P. Chippendale, M. Zanin, and M. Dalla Mura, “Geo-positional image forensics through scene-terrain registration,” in *International Joint Conference on Computer Vision, Imaging and Computer Graphics Theory and Applications VISAPP 2013*, Barcelona, Spain, Feb., 21-24 2013
 - M. Zanin, F. Tobia, C. Andreatta, M. Dalla Mura, and F. Remondino, “High-performance computing in image registration,” in *SPIE Remote Sensing 2012: High-Performance Computing in Remote Sensing*, vol. 8539, Edinburgh, United Kingdom, Sept., 24-27 2012
 - M. Dalla Mura, F. Nex, F. Remondino, and M. Zanin, “Integration of photogrammetric DSM and advanced image analysis for the classification of urban areas,” in *SPIE Remote Sensing 2012: Image and Signal Processing for Remote Sensing*, vol. 8537, Edinburgh, United Kingdom, Sept., 24-26 2012
 - L. Porzi, E. Ricci, M. Pastorelli, and M. Zanin, “Visual-inertial tracking on android for Augmented Reality applications,” in *2012 IEEE Workshop on Environmental, Energy, and Structural Monitoring Systems EESMS2012*, Perugia, Italy, Sept., 28 2012
 - M. Zanin, C. Andreatta, P. Chippendale, M. D. Mura, and F. Remondino, “Feature preserving method for creating visual appearance models and virtual views from collective images,” in *IEEE International Geoscience and Remote Sensing Symposium IGARSS 2012*, Munich, Germany, July, 22-27 2012, pp. 56–59
 - M. Dalla Mura, M. Zanin, C. Andreatta, and P. Chippendale, “Augmented Reality: Fusing the real and synthetic worlds,” in *IEEE International Geoscience and Remote Sensing Symposium IGARSS 2012*, Munich, Germany, July, 22-27 2012, pp. 170–173
 - P. Chippendale, M. Dalla Mura, and M. Zanin, “Real-World DEM harmonisation through photo re-projection,” in *IEEE International Geoscience and Remote Sensing Symposium IGARSS 2012*, Munich, Germany, July, 22-27 2012, pp. 428–430
 - A. Tate, P. Chippendale, M. Zanin, and C. Andreatta, “Antarctic field photos: unlocking the potential of archival images,” in *11th International Symposium on Antarctic Earth Sciences - ISAES*, Edinburgh, UK, July, 10-16 2011
 - P. Chippendale, M. Zanin, and C. Andreatta, “Mobile augmented photography,” in *7th European Conference on Visual Media Production - CVMP 2010*, London, UK, Nov. 17-18 2010
 - P. Chippendale, M. Zanin, and C. Andreatta, “Collective photography,” in *6th European Conference on Visual Media Production - CVMP 2009*, London, UK, Nov. 12-13 2009
 - P. Chippendale, M. Zanin, and C. Andreatta, “Re-photography and environment monitoring using a social sensor network,” in *15th International Conference on Image Analysis and Processing - ICIAP 2009*, Vietri sul Mare, Italy, Sept., 8-11 2009, pp. 34–42
 - P. Chippendale, M. Zanin, and C. Andreatta, “Environmental content creation and visualization in the ‘future internet’,” in *Future Internet Symposium 2008*, Vienna, Austria, Sept., 28-30 2008
 - P. Chippendale, M. Zanin, and C. Andreatta, “Spatial and temporal attractiveness analysis through geo-referenced photo alignment,” in *IEEE International Geoscience & Remote Sensing Symposium - IGARSS 2008*, Boston, Massachusetts, USA, July, 6- 11 2008
 - P. Chippendale and M. Zanin, “Automatic spatio-temporal registration of Alpine photos using DTMs and image processing techniques,” in *6th ARIDA Workshop on Innovations in 3D Measurement, Modeling and Visualization*, Povo, Trento, Italy, Feb., 25-26 2008



- International Conference Proceedings
- M. Zanin, “Localization of ahead vehicles with on-board stereo cameras,” in *14th International Conference on Image Analysis and Processing - ICIAP2007*, Modena, Italy, Sept. 11-13 2007, pp. 111–116
 - P. Lombardi, M. Zanin, and S. Messelodi, “Switching Models for Vision-based On-Board Road Detection,” in *8th International IEEE Conference on Intelligent Transportation Systems ITSC’05*, Vienna, Austria, Sept.13-16 2005, pp. 67–72
 - S. Messelodi, C. M. Modena, N. Segata, and M. Zanin, “A Kalman filter based background updating algorithm robust to sharp illumination changes,” in *13th International Conference on Image Analysis and Processing - ICIAP2005*, Cagliari, Italy, Sept.6-8 2005, pp. 163–170
 - P. Lombardi, M. Zanin, and S. Messelodi, “Unified Stereovision for Ground, Road, and Obstacle Detection,” in *2005 IEEE Intelligent Vehicles Symposium Proceedings*, Las Vegas NV, USA, Jun. 6-8 2005, pp. 783–788
 - C. Corridori and M. Zanin, “High Curvature Two-Clothoid Road Model Estimation,” in *Proceedings of IEEE Conference on Intelligent Transportation Systems (ITSC 2004)*, Washington DC, USA, Oct. 3-6 2004, pp. 630–635
 - M. Zanin, S. Messelodi, and C. M. Modena, “An Efficient Vehicle Queue Detection System Based on Image Processing,” in *Proceedings of ICIAP, 12th International Conference on Image Analysis and Processing*, Mantova, Italy, Sept.17-19 2003, pp. 232–237
- National Conference Proceedings
- P. Chippendale, M. Zanin, C. Andreatta, S. Messelodi, and O. Lanz, “Augmented Reality at FBK,” in *Convegno GIRPR 2012*, Certosa di Pontignano (Siena), Italy, 2012
 - M. Dalla Mura, M. Aravecchia, and M. Zanin, “Outdoor 3D with Kinect: preliminary results in the granulometry of fluvial sediments,” in *Low Cost 3D: sensori, algoritmi e applicazioni*, Trento, Italy, Mar., 8-9 2012
 - M. Zanin and C. Corridori, “Vision-based estimation of road parameters for intelligent vehicles,” in *Conferenza Italiana Sistemi Intelligenti CISI ’06*, Ancona, Italy, Sept. 27-29 2006
 - C. Corridori, D. Giordani, P. Lombardi, S. Messelodi, C. M. Modena, and M. Zanin, “An in-vehicle vision system for dangerous situation detection,” in *Conferenza Italiana sui Sistemi Intelligenti 2004 - Convegno GIRPR-04*, Perugia, Italy, Sept.14-17 2004
- Technical Reports
- M. Zanin, S. Messelodi, and C. M. Modena, “Diplodoc road stereo sequence,” Fondazione Bruno Kessler FBK, Tech. Rep. 164010, Apr. 2013
 - P. Chippendale, M. Zanin, and C. Andreatta, “Creating a social sensor network for monitoring the environment,” Fondazione Bruno Kessler FBK, Tech. Rep. 200810011, Oct. 2008
- Thesis
- M. Zanin, “Vision-based road recognition and obstacle detection for intelligent vehicles,” Ph.D. dissertation, International Doctorate School in Information and Communication Technologies, University of Trento, Italy, Mar. 2006
 - M. Zanin, “Tecniche di visione artificiale applicate al controllo del traffico: rilevamento di code e conteggio classificato di veicoli,” Master’s thesis, Università degli Studi di Bologna - Corso di Laurea in Ingegneria Informatica, Anno Accademico 1999-2000

Dissemination

- National TV
- RAI3, GeoScienza (Apr 24, 2012): interview and live presentation of Marmota project results.
 - RAI3, Tg Leonardo (Feb 10, 2011): news report about Marmota project and Augmented Reality applications.
 - RAI3, Buongiorno Italia (Nov 3, 2010): news report about Marmota project.
- Local TV and radio
- RadioDue RAI, Micro-Macro (Dec, 26 2011): participation to round table *Musica, numeri, stelle*, presenting machine learning approaches to music composition.
 - Various interviews and presentations of Marmota project results (TV RAI3 Tg Regionale, TV RAI3 Buongiorno Regione, Radio Dolomiti, Radio Trentino In Blu, Radio NBC).
- Magazines and Newspapers
- Various interviews about Marmota project on national magazines, e.g. Wired Italia, IO Donna.
 - Various interviews about Marmota project on local newspapers, e.g. L’Adige, Trentino, Il Corriere del Trentino.

- Blogosphere and Social Web**
- Maintainer and contributor of Marmota website and photo-blog <http://tev.fbk.eu/marmota/blog>. Featured on important international blogs, e.g. MicrosoftResearch blog, ReadWriteWeb, MountainBlog, MicroSiervos, OpenStreetMap blog, Gizmag, Digi.no, Google Earth blog.
 - Maintainer and contributor of VENTURI project website <https://venturi.fbk.eu>.
 - FBK Spotlight about Marmota project on YouTube: http://youtu.be/G_bTz7m3D7M.
- Trade fairs and Exhibits**
- Stand design and actual presentation of TeV projects in the context of various trade fairs, e.g. OutdoorDays, Researchers' Night, OSMit, MobilityGame, The Semantic Way.
 - Artistic installation *Through the looking glass*, in collaboration with artist Anna Scalfi.

Membership of professional organizations

-  IEEE Member no.: 41462924 (since 2002)
-  GIRPR Member no.: 2004-199 (since 2000)

Other activities

- Blogging about long term travelling and trekking (in Italian): <http://www.miczanin.it/apiedi>.
- Former President of *L'AltraStrada ONLUS*, a volunteering association working to combat human trafficking and providing direct support to victims of sex trafficking. Member from 2007 to 2014, President from 2010 to 2013.
- Former Steering Committee Member of *Circolo Ricreativo ITC*, *Associazione Astrofili Trentini AAT*, and *CICAP TAA*, local chapter of the Italian Committee for the Investigation of Claims of the Pseudosciences *CICAP*.