

CURRICULUM VITAE

MICHELE ZANIN



PERSONAL INFORMATION

Name **Michele ZANIN, PhD**
Address **via alla Scala, 4 - Trento, Italy**
Telephone **(+39) 0461 42 10 75**
Email **miczanin@ieee.org**
Nationality Italian
Date of birth November 15, 1974

WORK EXPERIENCE

- Dates (from-to)
 - Name and address of employer
 - Type of business or sector
 - Occupation or position held
 - Main activities and responsibilities
- July 1999 – to date**
FBK-irst (former ITC-irst) – TeV Technologies of Vision team
Fondazione Bruno Kessler - Ricerca scientifica e tecnologica
via Sommarive, 18 - Povo(TN), Italy
Research Center
Researcher (Nov 2001 – Oct 2004, Jan 2008 – to date)
Independant consultant (Oct – Dec 2000, Apr – Oct 2001, Nov 2004 – Dec 2007)
PhD student (Nov 2001 – Mar 2006)
Visiting Student (Jul 1999 – Mar 2001)
- Preparation of EU proposals SAVOIR (FP7-ICT-2009-6, IP, 17 partners, submitted) 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, to port some of the Marmota technologies to British Antarctic Survey Research Centre.
 - Main developer and one of the proposer 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.
 - 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).
 - 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
 - Thesis supervisor of Nicola Peroni (Nov 2003 – Mar 2004) and Mattia Broilo (Jul 2004 – Mar 2005).
 - WebValley 2001-2002-2003: lecture “*Compressione immagini e video*” (Image and video compression).
 - SCOCA and SCOCA Mobile projects: 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.

<ul style="list-style-type: none"> • Dates (from–to) • Name and address of employer • Type of business or sector • Occupation or position held • Main activities and responsibilities 	<p>July 2003 – October 2003 Center for Biological and Computational Learning (CBCL) Massachusetts Institute of Technology (MIT) Cambridge, Massachusetts USA Research Center Visiting Student</p> <ul style="list-style-type: none"> - 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. - Seminar: <i>Presentation of TeV activities and SCOCA project</i>, July 30, 2003, CBCL lab, MIT, Cambridge, MA USA <p>September 1999 – October 2000 scuola2F, P.zza T.A. Edison, 12 - Firenze, Italy Private School Computer Science Teacher</p>
<p>EDUCATION AND TRAINING</p> <ul style="list-style-type: none"> • Dates (from–to) • Name and type of organization providing education and training <ul style="list-style-type: none"> • Title of qualification awarded • Principal subjects/occupational skills covered <ul style="list-style-type: none"> • Dates (from–to) • Name and type of organization providing education and training <ul style="list-style-type: none"> • Title of qualification awarded • Principal subjects/occupational skills covered <ul style="list-style-type: none"> • Dates (from–to) • Name and type of organization providing education and training <ul style="list-style-type: none"> • Title of qualification awarded <ul style="list-style-type: none"> • Dates (from–to) • Name and type of organization providing education and training <ul style="list-style-type: none"> • Title of qualification awarded <ul style="list-style-type: none"> • Dates (from–to) • Name and type of organization providing education and training <ul style="list-style-type: none"> • Title of qualification awarded <ul style="list-style-type: none"> • Dates (from–to) • Name and type of organization providing education and training <ul style="list-style-type: none"> • Title of qualification awarded 	<p>2002 – 2006 University of Trento, Italy International Graduate School in Information and Communication Technologies (ICT) PhD (Philosophiae Doctor - Dottore di Ricerca) Computer Vision – Intelligent Transportation Systems – Intelligent Vehicles Thesis title: <i>“Vision-based road recognition and obstacle detection for intelligent vehicles”</i></p> <p>1994 – 2000 University of Bologna, Italy Engineering Faculty Laurea degree in Computer Science Engineering, 100/100 e lode Specialization in <i>Computer Science Systems and Applications</i> Thesis title: <i>“Tecniche di visione artificiale applicate al controllo del traffico: rilevamento di code e conteggio classificato di veicoli”</i></p> <p>SUMMER SCHOOLS</p> <p>April 19-23, 2010 University of Verona Verona, Italy 9th Advanced School on Computer Vision, Pattern Recognition and Image Processing, titled <i>Numerical Geometry on Non-Rigid Shapes</i></p> <p>June 9-13, 2003 Technical University of Crete Chania, Greece 5th Short Course on <i>Dynamic Traffic Flow Modelling and Control</i></p> <p>August 13-17, 2001 Portland State University Portland, Oregon USA <i>Image and Video Compression: Fundamentals, Standards, and Applications</i></p> <p>October 23-27, 2000 University of Modena Gruppo Italiano Ricercatori in Pattern Recognition (GIRPR) Modena, Italy Scuola Nazionale IAPR-IC <i>La Visione delle Macchine 2000</i></p>

PERSONAL SKILLS AND COMPETENCES

MOTHER TONGUE

OTHER LANGUAGES

TECHNICAL SKILLS AND COMPETENCES

Italian

English (Reading skills: Excellent – Writing skills: Good – Verbal skills: Good)

- Operating Systems: GNU/Linux, Windows
- Programming Languages: C/C++, Python, Java, Tcl/Tk, Prolog, Pascal
- Programming environment: GNU suite (gcc, autoconf, automake, etc.), CMake, Microsoft .NET
- Other: Matlab, GRASS GIS, CVS and subversion (both admin and user), \LaTeX , web development (XHTML, Javascript, CSS, Ajax, jQuery), emacs, Microsoft Office, OpenOffice

ADDITIONAL INFORMATION

• Journals

• Conference Proceedings

PUBLICATIONS

- 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
- 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
- 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
- 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
- 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

- Conference Proceedings
 - 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
 - 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 - 2° Convegno GIRPR-04*, Perugia, Italy, Sept. 14-17 2004
 - 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
 - Technical Reports
 - P. Chippendale, M. Zanin, and C. Andreatta, "Creating a social sensor network for monitoring the environment," Fondazione Bruno Kessler, 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
 - Laurea di I livello
 - Mattia Broilo, "Classificazione di ostacoli in sequenze di immagini riprese da bordo veicolo mediante Support Vector Machines," Master's thesis, Università degli Studi di Trento, Italy, Corso di Laurea in Ingegneria delle Telecomunicazioni, Anno Accademico 2003-2004, (in Italian)
 - Nicola Peroni, "Localizzazione della strada in immagini digitali riprese da bordo veicolo: algoritmi di segmentazione e sviluppo di un ambiente di valutazione," Master's thesis, Università degli Studi di Trento, Italy, Corso di Laurea in Ingegneria delle Telecomunicazioni, Anno Accademico 2002-2003, (in Italian)
 - International
 - 6th European Conference on Visual Media Production - CVMP 2009, Nov. 12-13, 2009, London, UK
 - 15th International Conference on Image Analysis and Processing ICIAP 2009, Sept. 8-11, 2009, Vietri sul Mare, Italy
 - 1st Future Internet Symposium FIS2008, Sept. 28-30, 2008, Vienna, Austria
 - 11th International Conference on Medical Image Computing and Computer Assisted Intervention MICCAI 2008, Sept. 6-10, 2008, New York, USA
 - 14th International Conference on Image Analysis and Processing ICIAP 2007, Sept. 11-13, 2007, Modena, Italy
 - IEEE Conference on Intelligent Transportation Systems ITSC'05, Sept. 13-16, 2005, Vienna, Austria (served as co-chair for the *Imaging and Image Analysis 1* regular session)
 - IEEE Intelligent Vehicles Symposium IV'05, June 6-8, 2005, Las Vegas NV, USA
 - IEEE Conference on Intelligent Transportation Systems ITSC'04, Oct. 3-6, 2004, Washington DC, USA
 - IEEE Intelligent Vehicles Symposium IV'04, June 14-17, 2004, Parma, Italy
 - McGovern Retreat, Sep 10-11, 2003, Cape Cod, Massachusetts, USA
 - International Workshop on In-Vehicle Cognitive Computer Vision Systems, Apr. 3, 2003, Graz, Austria
 - IEEE Intelligent Vehicles Symposium IV'02, June 17-21, 2002, Versailles, France
 - The April Fools' Day workshop on Computational Humour TWLT 20, Apr. 15-16, 2002, Trento, Italy
 - National
 - Tavola Rotonda 'Web 2.0, geoweb, GPS e dispositivi mobili per il turismo e l'outdoor' Outdoor-Days2008, May 24, 2008, Riva del Garda, Italy
 - Conferenza Italiana Sistemi Intelligenti CISI'06, Sept. 27-29, 2006, Ancona, Italy
 - Conferenza Italiana sui Sistemi Intelligenti 2004 - 2° Convegno GIRPR-04, Sept. 14-17, 2004, Perugia, Italy
- FORMER STUDENTS**
- Mattia Broilo, "Classificazione di ostacoli in sequenze di immagini riprese da bordo veicolo mediante Support Vector Machines," Master's thesis, Università degli Studi di Trento, Italy, Corso di Laurea in Ingegneria delle Telecomunicazioni, Anno Accademico 2003-2004, (in Italian)
- Nicola Peroni, "Localizzazione della strada in immagini digitali riprese da bordo veicolo: algoritmi di segmentazione e sviluppo di un ambiente di valutazione," Master's thesis, Università degli Studi di Trento, Italy, Corso di Laurea in Ingegneria delle Telecomunicazioni, Anno Accademico 2002-2003, (in Italian)
- CONFERENCES ATTENDED**
- 6th European Conference on Visual Media Production - CVMP 2009, Nov. 12-13, 2009, London, UK
- 15th International Conference on Image Analysis and Processing ICIAP 2009, Sept. 8-11, 2009, Vietri sul Mare, Italy
- 1st Future Internet Symposium FIS2008, Sept. 28-30, 2008, Vienna, Austria
- 11th International Conference on Medical Image Computing and Computer Assisted Intervention MICCAI 2008, Sept. 6-10, 2008, New York, USA
- 14th International Conference on Image Analysis and Processing ICIAP 2007, Sept. 11-13, 2007, Modena, Italy
- IEEE Conference on Intelligent Transportation Systems ITSC'05, Sept. 13-16, 2005, Vienna, Austria (served as co-chair for the *Imaging and Image Analysis 1* regular session)
- IEEE Intelligent Vehicles Symposium IV'05, June 6-8, 2005, Las Vegas NV, USA
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- McGovern Retreat, Sep 10-11, 2003, Cape Cod, Massachusetts, USA
- International Workshop on In-Vehicle Cognitive Computer Vision Systems, Apr. 3, 2003, Graz, Austria
- IEEE Intelligent Vehicles Symposium IV'02, June 17-21, 2002, Versailles, France
- The April Fools' Day workshop on Computational Humour TWLT 20, Apr. 15-16, 2002, Trento, Italy
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- Conferenza Italiana Sistemi Intelligenti CISI'06, Sept. 27-29, 2006, Ancona, Italy
- Conferenza Italiana sui Sistemi Intelligenti 2004 - 2° Convegno GIRPR-04, Sept. 14-17, 2004, Perugia, Italy
- MEMBERSHIP OF PROFESSIONAL ORGANIZATIONS**
- IEEE Member no.: 41462924 (since 2002)
- GIRPR Member no.: 2004-199 (since 2000)