

Niki Martinel

ASSISTANT PROFESSOR · MACHINE LEARNING AND COMPUTER VISION

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The following CV is also available online

Main Research and Teaching Activities

Current Position and Roles

CURRENT POSITION

University of Udine

Udine, Italy

TENURED ASSISTANT PROFESSOR AT AVIREs/MLP LAB (UNIVERSITY OF UDINE) - MACHINE LEARNING AND COMPUTER

Jan 2019 - To Date

VISION

Recent Activities:

- Designed and implemented a deep learning architecture for person re-identification that exploits the the image pyramid framework (using PyTorch). Paper accepted at the International Conference on Computer Vision and Pattern Recognition Workshops – CVPRW2019
- Contributed to the visual tracking paper by means of deep reinforcement learning with expert demonstrations (using PyTorch). Paper accepted at the International Conference on Computer Vision Workshops - Visual Object Tracking Challenge – VOT2019
- Contributed to the writing of the accepted H2020 Marie Curie ETN project entitled “AdvanCed Hardware/Software Components for Integrated/Embedded Vision SystEms” (ACHIEVE)
- Responsible for the PRESNET WP regarding the video analysis/machine learning for autonomous UAV control. Funded by the Italy/Singapore Ministry of Defense.

INTERNATIONAL ROLES

Italian IAPR chapter

Firenze, Italy

DEPUTY CHIEF FOR THE NEURAL NETWORKS AND DEEP LEARNING TECHNICAL COMMITTEE

September 2017 - To Date

Creating a network of people that will guide new and young members through the challenges and existing approaches of deep neural networks (deep learning).

NATO

Bruxelles, Belgium

MEMBER OF THE NATO ACTIVITY IST-169 ROBUSTNESS AND ACCOUNTABILITY IN MACHINE LEARNING SYSTEM

August 2018 - To Date

Determine the state-of-the-art in robustness and accountability for deep learning systems with complex and large models which are virtually impossible to manage by humans.

Teaching and Research

TEACHING AT INTERNATIONAL SCHOOLS

IAPR

Italy

TEACHER

2016 - To Date

Invited to offer machine learning-related classes at the International Doctorate School entitled “Scuola di Visione delle Macchine” (2016) / International Summer School on Artificial Intelligence - From Deep Learning to Data Analytics (2018, 2019).

TEACHING

National and International Universities

Italy/Austria

TEACHER

2011 - To Date

More than 11 teaching activities on bachelor, master and doctoral computer science courses offered by the University of Udine (Italy) and the Alpen-Adria University of Klagenfurt (Austria).

DOCTORATE SCHOOL ORGANIZER

International Schools

LOCAL CHAIR

Italy
2016-To Date

Organizer of the 2016 edition of the International Doctorate School entitled “Scuola di Visione delle Macchine” promoted by the Italian IAPR Chapter and of the 2018/2019 International Summer School on Artificial Intelligence (AI-DLDA).

DOCTORATE THESIS REFEREE

University of Alcalá de Henares

INTERNATIONAL REFEREE

Alcalá de Henares, Spain

2015

International member of the evaluation committee for award of the International Doctor of Philosophy Degree in Electronics, department of Electronics, University of Alcalá de Henares, Spain, 2015.

University of Alcalá de Henares

INTERNATIONAL REFEREE

Alcalá de Henares, Spain

2016

International member of the evaluation committee for award of the International Doctor of Philosophy Degree in Electronics, department of Electronics, University of Alcalá de Henares, Spain, 2016.

INTERNATIONAL JOURNAL EDITOR

IEEE/IET CAAI Transactions on Intelligence Technology

ASSOCIATE EDITOR

IET

2016

Associate editor for the International IEEE-IET Journal CAAI Transactions on Intelligence Technology.

INTERNATIONAL RESEARCH

University of California at Riverside

VISITING RESEARCHER

Riverside, CA, USA

2014 – 2016

Junior specialist (2012–2013) and visiting assistant project scientist (2016) working on projects funded by the Office of Naval Research (ONR) and by the National Science Foundation (NSF).

Alpen-Adria University of Klagenfurt

VISITING PROFESSOR

Klagenfurt, Austria

2018

Visiting professor for guest lectures series on Artificial Vision.

RESEARCH COLLABORATIONS

National and International Universities

RESEARCHER

Italy/Slovenia/USA/Australia

2012 – To Date

Collaborations with national and international universities including: University of Firenze, University of Ljubljana, University of Boston, University of California at Riverside, Queensland University of Technology, University of Adelaide.

INTERNATIONAL CONFERENCE ORGANIZATION

International Conference on Distributed Smart Cameras

MULTIMEDIA CHAIR

Eindhoven, The Netherlands

2018

Multimedia chair for the 12th International Conference on Distributed Smart Cameras, held in Eindhoven, The Netherlands.

International Conference on Distributed Smart Cameras

PUBLICATION CHAIR

Venice, Italy

2014

Publication chair for the 8th International Conference on Distributed Smart Cameras, held in Venice, Italy.

IEEE/ACM/Springer

TECHNICAL PROGRAM COMMITTEE

2013 - To Date

Member of the technical program committee of various top-notch computer vision international conferences and workshops (e.g., AVSS/WACV/ECCV/ICCV/CVPR).

INVITED PRESENTATIONS AND SEMINARS

International Universities

SEMINARS

2015 – To Date

Invited to present current and past research activities at different International Universities, including the University of Ljubljana (Slovenia) and the University of Massachusetts at Lowell (Massachusetts, USA).

TECHNOLOGICAL TRANSFER

Eye-Tech Srl

MEMBER

2016 – To Date

Member of a spin-off of the University of Udine.

REVIEWING ACTIVITIES

IEEE/ACM/Springer

REVIEWER

2014 – To Date

Reviewer and member of the technical program committee of top-notch international conferences.

IEEE/ACM/Elsevier/IET/SPIE

REVIEWER

2014 – To Date

Reviewer for prestigious international computer vision and machine learning-related journals.

COMPETITIVE RESEARCH PROJECTS

University of Udine

Udine, Italy

WP/TECHNICAL RESPONSIBLE

2010 – To Date

WP responsible and unit member for 7 international and 5 national projects.

PUBLICATIONS

IEEE/ACM/Elsevier/Springer

AUTHOR/CO-AUTHOR

2010 – To Date

Author or co-author of 19 international journal papers, 28 papers published in international conferences proceedings and 3 book chapters.

IEEE/ACM

AWARDS

2014 – To Date

- Main author of the paper entitled “Unsupervised Hashing with Neural Trees for Image Retrieval and Person Re-Identification” by N. Martinel, G. L. Foresti and C. Micheloni, nominated for the **Best Paper Award** at the International Conference on Distributed Smart Cameras (2018)
- Main author of the paper entitled “Distributed and Unsupervised Cost-Driven Person Re-identification” by N. Martinel, G. L. Foresti and C. Micheloni, receiving the **Best Industry Related Paper Award** at the International Conference on Pattern Recognition (2016)
- Main author of the paper entitled “Sparse Matching of Random Patches for Person Re-Identification” by N. Martinel and C. Micheloni, receiving the **Best Paper Award** at the International Conference on Distributed Smart Cameras (2014)

RESEARCH QUALITY

Bibliometric Indicators

AUTHOR

2012 – To Date

- **Scopus:** h – index = 15 – citations = 608
- **Google Scholar:** h – index = 18 – i10 – index = 27 – citations = 989

Dr. Martinel has received the “Abilitazione Scientifica Nazionale” for the Associate Professor position for the scientific sectors 01/B1 and 09/H1.

Detailed List

Education

University of Udine

PH.D. IN INDUSTRIAL AND INFORMATION ENGINEERING

Udine, Italy

May 2014 - May 2017

- Thesis entitled “Biologically-Inspired Hierarchical Learning Architectures for Image Classifications”.
Supervisor: Prof. Gian Luca Foresti
Università degli Studi di Udine, May 22, 2017, pp. 155

University of Udine

PH.D. IN MULTIMEDIA COMMUNICATION

Udine, Italy

January 2011 - April 2014

- Thesis entitled “A Distributed Video Surveillance System to Track Persons in Camera Networks”.
Supervisor: Dr. Christian Micheloni
Università degli Studi di Udine, April 9, 2014, pp. 163.

University of Udine

MASTER DEGREE IN MULTIMEDIA COMMUNICATION

Udine, Italy

October 2008 - November 2010

- Thesis entitled “Design and Development of a Dynamic User Interface for Video Surveillance Systems”.
Supervisors: Dr. Christian Micheloni and Prof. Gian Luca Foresti
Università degli Studi di Udine, November 2010, pp. 234.
- Mark: 110/110 *cum laude*.

University of Udine

BACHELOR DEGREE IN MULTIMEDIA SCIENCE AND TECHNOLOGIES

Udine, Italy

September 2005 - September 2008

- Thesis entitled “A Portal Designed for Querying XML Documents”.
Supervisors: Dr. Demis Ballis and Dr. Michele Baggi
Università degli Studi di Udine, September 2008, pp. 200.
- Mark: 104/110.

International Schools

University of Cambridge, UK / University of Catania, Italy

INTERNATIONAL COMPUTER VISION SUMMER SCHOOL ICVSS 2011 - REGISTRATION, RECOGNITION AND RECONSTRUCTION
IN IMAGES AND VIDEO

Scicli, Italy

July 2011

University of Modena and Reggio Emilia / IAPR

INTERNATIONAL SHORT SPRING SCHOOL ON SURVEILLANCE - S4

Modena, Italy

May 2011

International Experiences

University of California, Riverside, CA

ASSISTANT PROJECT SCIENTIST - SUPERVISOR: PROF. AMIT K. ROY-CHOWDHURY

Riverside, CA, USA

January 2016 - March 2016

Leading a project module on person re-identification

- Implemented a human-in-the-loop method that yields incremental learning. This is used to perform temporal model (metric learning) adaptation
- Other investigated topics: metric learning; deep learning; convex optimization; active learning; incremental learning

University of California, Riverside, CA

JUNIOR SPECIALIST - SUPERVISOR: PROF. AMIT K. ROY-CHOWDHURY

Riverside, CA, USA

September 2012 - April 2013

Jointly working on a project module on person re-identification

- Implemented an approach that tackles the re-identification objective by performing classification of pairwise camera-dependent visual feature transformations
- Other investigated topics: feature transformation; unsupervised manifold learning; machine learning; deep learning; convex/distributed optimization

Teaching Activities

University of Udine

SMART NETWORKED DEVICES

Teacher for the master course in Multimedia and Information Technology

Udine, Italy

2019 - 2020

University of Udine

MULTIMEDIA DATA MANAGEMENT LAB

Teacher for the bachelor course in Multimedia and Science Technologies

Udine, Italy

2019 - 2020

University of Udine

MULTIMEDIA DATA MANAGEMENT LAB

Teacher for the bachelor course in Multimedia and Science Technologies

Udine, Italy

2018 - 2019

International Summer School on Artificial Intelligence: From Deep Learning to Data Analytics (AI-DLDA)

TOWARDS HUMAN-LEVEL IMAGE UNDERSTANDING WITH DEEP LEARNING

Invited teacher for the International Doctorate School

Udine, Italy

June 2019

Alpen-Adria University at Klagenfurt

ARTIFICIAL VISION

Teacher for the master/doctorate course offered by the Institute of Networked and Embedded Systems

Klagenfurt, Austria

June 2018

International Summer School on Artificial Intelligence: From Deep Learning to Data Analytics (AI-DLDA)

TOWARDS HUMAN-LEVEL IMAGE UNDERSTANDING WITH DEEP LEARNING

Invited teacher for the International Doctorate School

Udine, Italy

July 2018

University of Udine

MACHINE LEARNING

Commissioned teacher for the master course in Computer Science – International Degree

Udine, Italy

2017 - 2018

University of Udine

SMART VISION AND SENSOR NETWORKS

Commissioned teacher for the master course in Computer Science – International Degree

Udine, Italy

2017 - 2018

Istituto Tecnico Superiore ITS - Kennedy

INTRODUCTION TO PROBABILITY

Teacher

Pordenone, Italy

2017

University of Udine

MACHINE LEARNING

Commissioned teacher for the master course in Computer Science – International Degree

Udine, Italy

2016 - 2017

University of Udine

3D COMPUTER GRAPHICS

Commissioned teacher for the master course in Computer Science – International Degree

Udine, Italy

2016 - 2017

University of Udine

SMART VISION AND SENSOR NETWORKS

Commissioned teacher for the master course in Computer Science – International Degree

Udine, Italy

2016 - 2017

International Machine Vision Summer School (VISMAC)

MACHINE/DEEP LEARNING INTRODUCTION

Invited teacher for the international doctorate school

Pordenone/Grado, Italy

June 2016

University of Udine

MACHINE LEARNING

Commissioned teacher for the master course in Computer Science – International Degree

Udine, Italy

2015 - 2016

University of Udine

3D COMPUTER GRAPHICS

Commissioned teacher for the master course in Computer Science – International Degree

Udine, Italy

2015 - 2016

University of Udine

SMART VISION AND SENSOR NETWORKS

Commissioned teacher for the master course in Computer Science – International Degree

Udine, Italy

2015 - 2016

University of Udine

3D COMPUTER GRAPHICS

Teaching assistant for the master course in Multimedia Communication and Information Technologies

Udine, Italy

2013 - 2014

University of Udine

VIDEO PROCESSING AND TRANSMISSION

Teaching assistant for the master course in Multimedia Communication and Information Technologies

Udine, Italy

2013 - 2014

University of Udine

SECURITY IN MULTIMEDIA APPLICATIONS

Teaching assistant for the bachelor course in Multimedia Science and Technology

Udine, Italy

2013 - 2014

University of Udine

VIDEO PROCESSING AND TRANSMISSION

Teaching assistant for the master course in Multimedia Communication and Information Technologies

Udine, Italy

2011 - 2012

Working Experience

University of Udine

POST-DOC FELLOW - SUPERVISOR: PROF. GIAN LUCA FORESTI

Leading research projects on person re-identification and pattern recognition

- Proposed an aerial video surveillance system that exploits small-scale UAVs to perform environmental monitoring
- Designed a deep learning architecture for food recognition that exploits the vertical layer structure of food dishes
- Proposed a re-identification solution that transfer the knowledge available in the single-person re-identification domain to the group re-identification one

Udine, Italy

May 2017 - Jan 2018

Eye-Tech S.r.l.

ADVISORY BOARD MEMBER - MACHINE LEARNING EXPERT

Leading R&D projects on Machine Learning and Computer Vision

- Design and implementation of a prototype software for the automatic evaluation of goalkeepers
- Design and implementation of an automatic food understanding approach for embedded platforms
- Re-designed the Eye-D software to control the access of sensible areas through biometric identification
- Supervised the design and engineering of the Smart Person Identification software

Pordenone, Italy

December 2015 - May 2017

University of Udine

POST-DOC FELLOW - SUPERVISOR: PROF. GIAN LUCA FORESTI

Leading research projects on person re-identification and pattern recognition

- Proposed a real-time incremental and geo-referenced solution to build robust mosaicks by means of small-scale UAVs
- Proposed a stochastic optimization-based method to temporally adapt a metric learning model with human in the loop
- Designed a neural tree-based solution that borrows from neural networks and extreme learning machines to self-discover the optimal architecture
- Implemented a person re-identification framework that optimizes the network resources and largely improves the performances of existing solutions

Udine, Italy

June 2015 - May 2016

University of Udine

POST-DOC FELLOW - SUPERVISOR: PROF. GIAN LUCA FORESTI

Leading research projects on person re-identification

- Designed a re-ranking solution that discovers the visual similarities shared between similar persons and removes them to focus on the relevant re-identification details
- Designed a re-identification framework to fuse multiple experts re-identification decisions through a probabilistic scheme
- Proposed a framework that exploits visual saliency and learns multiple metrics between different image features

Udine, Italy

February 2014 - May 2015

University of Udine

COMPUTER VISION EXPERT - SUPERVISOR: PROF. GIAN LUCA FORESTI

Unit Leader for the development of a mosaicking software for aerial images acquired by low altitude Unmanned Aerial Vehicles (UAVs). National Project ADVISOR III.

- Supervised the software engineering
- Designed the incremental stitching computer vision solution that exploits GPS-coordinates to perform real time operations

Udine, Italy

October 2013 - March 2014

InfoFactory S.r.l.

COMPUTER SYSTEMS ANALYST, DESIGNER AND DEVELOPER

Design of Graphical User Interface for the SRSNet Project funded by the European Commission

- Designed the User Interface through Human-Computer Interaction evaluation procedures
- Development of the computer vision solution to track the targets across different overlapping cameras

Udine, Italy

June 2010 - December 2011

MEDIASTUDIO S.r.l.

COMPUTER SYSTEMS ANALYST, DESIGNER AND DEVELOPER

Design of Graphical User Interface for 3D Software | Design and development of mobile applications

- Development of mobile applications for the design of customized kitchens
- Re-design and re-engineering of the graphical user interface of the software product used to design customized kitchens

Pordenone, Italy

April 2009 - December 2010

MEDIASTUDIO S.r.l.

COMPUTER SYSTEMS ANALYST, DESIGNER AND DEVELOPER

Design of Graphical User Interface for 3D Software

- Re-design and re-engineering of the graphical user interface of the software product used to create/draw kitchens objects (i.e., a Computer Aided Design software)

Pordenone, Italy

March 2008 - March 2009

FotocolorMartinelli S.n.c.

GRAPHIC DESIGNER

Photo retouching | Dealer

Maniago, PN, Italy

June 2008 - September 2008

FotocolorMartinelli S.n.c.

GRAPHIC DESIGNER

Photo retouching | Dealer

Maniago, PN, Italy

June 2007 - September 2007

National and International Collaborations

University of Adelaide

PROF. GUSTAVO CARNIERO

Collaborations with Prof. Gustavo Carniero on reinforcement learning for visual tracking

Adelaide, Australia

2018 - To Date

Queensland University of Technology

DR. DAVIDE FONTANAROSA

Collaborations with Dr. Davide Fontanarosa on visual tracking in ultrasound images and robotics for surgery applications

Brisbane, Australia

2018 - To Date

University of Firenze

PROF. ALBERTO DEL BIMBO

Collaborations with Prof. Alberto del Bimbo on re-identification solutions proposing single-to-group transfer learning approaches

Firenze, Italy

2016 - To Date

University of Pavia

DR. GIUSEPPE LISANTI

Collaborations with Dr. Giuseppe Lisanti on re-identification solutions proposing single-to-group transfer learning approaches

Firenze, Italy

2016 - To Date

University of Ljubljana

PROF. DANJIEL SKOCAJ

Collaborations with Prof. Danjuel Skocaj on incremental learning solutions

Ljubljana, Slovenia

2015 - To Date

University of Alcalá de Henares

PROF. ALFREDO GARDEL VICENTE

Collaborations with Prof. Alfredo Gardel Vicente investigating re-ranking schemes for person re-identification

Alcalá de Henares, Spain

2014 - To Date

Indian Institute of Technology, Kharagpur

DR. ABIR DAS

Collaborations with Dr. Abir Das on person re-identification solutions

Boston, CA, USA

2012 - To Date

University of California at Riverside

PROF. AMIT K. ROY-CHOWDHURY

Collaborations with Prof. Amit K. Roy-Chowdhury investigating person re-identification solutions grounded on human-in-the-loop and feature transformation techniques. Other investigated topics include: machine learning; deep learning; convex optimization; active learning.

Riverside, CA, USA

2012 - To Date

International Research Projects

European Community – Marie Curie European Training Network project	<i>EU</i>
MEMBER OF THE RESEARCH UNIT OF THE UNIVERSITY OF UDINE: ADVANCED HARDWARE/SOFTWARE COMPONENTS FOR INTEGRATED/EMBEDDED VISION SYSTEMS (ACHIEVE)	<i>2017 - To Date</i>
Italian/Singapore Ministry of Defense	<i>Rome, Italy / Singapore, Singapore</i>
MEMBER/WP RESPONSIBLE OF THE RESEARCH UNIT OF THE UNIVERSITY OF UDINE: PRESCRIPTIVE SITUATIONAL AWARENESS FOR COOPERATIVE AUTO-ORGANIZING AERIAL SENSOR NETWORKS (PRESNET)	<i>2016 - To Date</i>
National Science Foundation	<i>Riverside, CA, USA</i>
MEMBER OF THE RESEARCH TEAM WORKING ON THE NATIONAL SCIENCE FOUNDATION PROJECT ENTITLED “MULTIROBOT-HUMAN COORDINATION FOR VISUAL SCENE UNDERSTANDING” – IIS-1316934	<i>2016</i>
European Community – Interreg IV research project	<i>EU</i>
MEMBER OF THE RESEARCH UNIT OF THE UNIVERSITY OF UDINE: SMART RESOURCE-AWARE MULTI-SENSOR NETWORK (SRSNET)	<i>2011 - 2012</i>
European Community – Transnational Cooperation Programme EU-SEE/A/426/1	<i>EU</i>
MEMBER OF THE RESEARCH UNIT OF THE UNIVERSITY OF UDINE: INTER-REGIONAL COOPERATION FOR VALORISATION OF R&D RESULTS (INTERVALUE)	<i>2009 - 2012</i>
European Defense Agency – Defence R&T Joint Investment Programme on Force Protection - Project A-0444-RT-GC	<i>EU</i>
MEMBER OF THE RESEARCH UNIT OF THE UNIVERSITY OF UDINE: DISTRIBUTED AND ADAPTIVE MULTISENSOR FUSION ENGINE (DAFNE)	<i>2009 - 2011</i>
European Defense Agency – Defense R&T Joint Investment Program on Force Protection – Project A-0380-RT-GC	<i>EU</i>
MEMBER OF THE RESEARCH UNIT OF THE UNIVERSITY OF UDINE: MULTI-SENSOR ANTISNIPEER SYSTEM (MUSAS)	<i>2007 - 2010</i>

National Research Projects

Friuli Venezia-Giulia Region / beanTech Srl	<i>Trieste, Italy</i>
MEMBER/TECHICAL RESPONSIBLE OF THE RESEARCH UNIT OF THE UNIVERSITY OF UDINE: SMART MACHINE BOX (SMB)	<i>2018 - To Date</i>
Friuli Venezia-Giulia Region / Wartsila Spa	<i>Trieste, Italy</i>
MEMBER/TECHICAL RESPONSIBLE OF THE RESEARCH UNIT OF THE UNIVERSITY OF UDINE: ADVANCED TRACKING OF TECHNICAL PERSONNEL THROUGH AUGMENTED REALITY	<i>2018 - To Date</i>
Friuli Venezia-Giulia Region / Rosa Plast Srl	<i>Trieste, Italy</i>
MEMBER/TECHICAL RESPONSIBLE OF THE RESEARCH UNIT OF THE UNIVERSITY OF UDINE: COLLABORATIVE DESIGN WITH MIXED REALITY	<i>2018 - To Date</i>
Friuli Venezia-Giulia Region / Nuova Contec Srl	<i>Trieste, Italy</i>
MEMBER/TECHICAL RESPONSIBLE OF THE RESEARCH UNIT OF THE UNIVERSITY OF UDINE: INTEGRATED VIDEO ANALYTICS SYSTEM FOR THE INSPECTION OF SEWER PIPES (SVIPCF)	<i>2016 - 2017</i>
Italian Ministry of Defense	<i>Rome, Italy</i>
MEMBER/TECHICAL RESPONSIBLE OF THE RESEARCH UNIT OF THE UNIVERSITY OF UDINE: AUGMENTED REALITY FOR MOBILE APPLICATIONS: NAVIGATION SUPPORT FOR MILITARY PATROLS IN HIGH RISK AREAS, ADVANCED VISUALIZATION OF INTEREST POINTS IN TOURISTIC APPLICATIONS AND INTELLIGENT RECOGNITION OF EXPLOSIVE REMNANT OF WAR (RA2M)	<i>2015 - To Date</i>

Italian Ministry of Defense/Friuli Venezia-Giulia Region

Rome/Trieste, Italy

MEMBER/TECHICAL RESPONSIBLE OF THE RESEARCH UNIT OF THE UNIVERSITY OF UDINE: PROACTIVE ARTIFICIAL VISION FOR ADVANCED UAV SYSTEMS FOR PROTECTION OF MILITARY UNITS, TERRITORIAL CONTROL AND ENVIRONMENTAL PREVENTION (SUPREME)

2015 - To Date

Italian Ministry of Defense

Rome, Italy

MEMBER OF THE RESEARCH UNIT OF THE UNIVERSITY OF UDINE: SYSTEM DEPLOYMENT AND AUTOMATIC NETWORK RECONFIGURATION OF MOBILE SENSORS ON UAVS FOR THE PROTECTION OF CONVOYS, PATROLS AND MILITARY INSTALLATIONS OF (ADVISOR III)

2011 - 2013

Italian Ministry of Defense

Rome, Italy

MEMBER OF THE RESEARCH UNIT OF THE UNIVERSITY OF UDINE: AN ADVANCED MODEL FOR AUTONOMOUS RECONFIGURATION OF A NETWORK OF ACTIVE SENSORS FOR PROTECTION OF MILITARY CAMPS IN ABROAD MISSIONS (ADVISOR II)

2008 - 2011

Industrial Projects

Sim2 Multimedia S.p.a.

Pordenone, Italy

PROJECT MANGER: DESIGN OF GRAPHICAL USER INTERFACE DEVELOPMENT OF AN ADOBE FLASH[®]-BASED DYNAMIC SYSTEM DIGITAL NETWORK MANAGEMENT
Interfaces and Media Content for a Dynamic Digital Signage Network

2009 - 2010

Reviewing Activities

IEEE

- JOURNAL OF SELECTED TOPICS IN SIGNAL PROCESSING
- TRANSACTIONS ON PATTERN ANALYSIS AND MACHINE INTELLIGENCE
- TRANSACTIONS ON IMAGE PROCESSING
- TRANSACTIONS ON CYBERNETICS
- TRANSACTIONS ON CIRCUITS AND SYSTEMS FOR VIDEO TECHNOLOGY
- TRANSACTIONS ON INFORMATION FORENSICS AND SECURITY
- TRANSACTIONS ON MULTIMEDIA
- SIGNAL PROCESSING LETTERS
- IEEE ACCESS

Elsevier

- IMAGE AND VISION COMPUTING
- PATTERN RECOGNITION
- COMPUTER VISION AND IMAGE UNDERSTANDING
- PATTERN RECOGNITION LETTERS
- SIGNAL PROCESSING: IMAGE COMMUNICATION
- JOURNAL OF VISUAL COMMUNICATION AND IMAGE REPRESENTATION REGISTRATION
- INTERNATIONAL JOURNAL OF ELECTRONICS AND COMMUNICATIONS
- KNOWLEDGE-BASED SYSTEMS
- 3D RESEARCH

ACM

- TRANSACTION ON SENSOR NETWORKS

Springer

- THE VISUAL COMPUTER

IET

- COMPUTER VISION
- IMAGE PROCESSING

SPIE

- JOURNAL OF ELECTRONICAL IMAGING
- OPTICAL ENGINEERING

International Conference Organization

MULTIMEDIA CHAIR

ACM International Conference on Distributed Smart Cameras (ICDSC)

Eindhoven, The Netherlands

September 2018

ACM International Conference on Distributed Smart Cameras (ICDSC)

Stanford, CA, USA

September 2017

PUBLICATION CHAIR

IEEE/ACM International Conference on Distributed Smart Cameras (ICDSC)

Venice, Italy

November 2014

LOCAL CHAIR

International Machine Vision Summer School (VISMAC)

Pordenone/Grado, Italy

June 2016

International Conference for the Italian Chapter on Pattern Recognition (GIRPR)

Grado (UD), Italy

June 2016

TECHNICAL PROGRAM COMMITTEE

European Conference on Computer Vision (ECCV)

Glasgow, Scotland

August 2020

IEEE International Conference on Computer Vision and Pattern Recognition (CVPR)

Seattle WA, USA

June 2020

AAAI Conference on Artificial Intelligence (AAAI)

New York NY, USA

February 2020

IEEE International Conference on Robotics and Automation (ICRA)

Paris, France

May-June 2020

IEEE International Conference on Computer Vision (ICCV)

Seoul, South Korea

October-November 2019

IEEE International Conference on Computer Vision and Pattern Recognition (CVPR)

Long Beach CA, USA

June 2019

IEEE International Conference on Distributed Smart Cameras (ICDSC)

Trento, Italy

September 2019

IEEE International Conference on Robotics and Automation (ICRA)	<i>Montreal, Canada</i> May 2019
IEEE International Conference on Winter Applications of Computer Vision (WACV)	<i>Waikoloa Village, HI, USA</i> January 2019
IEEE International Conference on Distributed Smart Cameras (ICDSC)	<i>Eindhoven, The Netherlands</i> September 2018
International Conference on Pattern Recognition (ICPR)	<i>Beijing, China</i> August 2018
IEEE International Conference on Winter Applications of Computer Vision (WACV)	<i>Lake Tahoe, CA, USA</i> March 2018
International Workshop on on Cross-domain Human Identification (CHI)	<i>Venice, Italy</i> October 2017
International Workshop on Multimedia Assisted Dietary Management (MADIMA)	<i>Catania, Italy</i> December 2017
IEEE International Conference on Image Processing Theory, Tools and Applications (IPTA)	<i>Montreal, Canada</i> December 2017
IEEE International Conference on Computer Vision (ICCV)	<i>Venice, Italy</i> October 2017
International Workshop on Assistive Computer Vision and Robotics (ACVR)	<i>Venice, Italy</i> October 2017
IEEE International Conference on Distributed Smart Cameras (ICDSC)	<i>Stanford, CA, USA</i> September 2017
International Symposium on Image and Signal Processing and Analysis (ISPA)	<i>Ljubljana, Slovenia</i> September 2017
IEEE International Conference on Advanced Video and Signal based Surveillance (AVSS)	<i>Lecce, Italy</i> September 2017
IEEE International Conference on Winter Applications of Computer Vision (WACV)	<i>Santa Rosa, CA, USA</i> March 2017
International Conference on Pattern Recognition (ICPR)	<i>Cancun, Mexico</i> December 2016
IEEE International Workshop on Assisted Computer Vision for Robotics (ACVR) - in Conjunction with ECCV	<i>Amsterdam, The Netherlands</i> October 2016

ACM International Conference on Distributed Smart Cameras (ICDSC)

Paris, France

September 2016

ACM International Conference on Distributed Smart Cameras (ICDSC)

Seville, Spain

September 2015

IEEE/ACM International Conference on Distributed Smart Cameras (ICDSC)

Venice, Italy

November 2014

Skills

Machine Learning

- NEURAL NETWORKS/DEEP LEARNING, METRIC LEARNING, NEURAL TREES, EXTREME LEARNING MACHINES, SUPPORT VECTOR MACHINES, DICTIONARY LEARNING, INCREMENTAL LEARNING, DIMENSIONALITY REDUCTION, OPTIMIZATION
- ENVIRONMENTS/TOOLS: PYTORCH, TORCH, TENSORFLOW, KERAS, PYTHON, C/C++, ANACONDA, SPYDER, PYCHARM, ZEROBRANE STUDIO, MATLAB

Computer Vision

- VISUAL UNDERSTANDING/RECOGNITION/DETECTION/TRACKING, FEATURE LEARNING, FEATURE EXTRACTION, FEATURE MATCHING, TEMPORAL ADAPTATIONS
- ENVIRONMENTS/TOOLS: PYTORCH, PYTHON, C#, C/C++, SPYDER, PYCHARM, MATLAB, VISUAL STUDIO

Unmanned vehicles

- UGV, UAV, AUTONOMOUS NAVIGATION, VISUAL ANALYTICS
- ENVIRONMENTS/TOOLS: ROS, PYTHON, C#, C/C++, SPYDER, PYCHARM, VISUAL STUDIO, ARDUINO, RASPBERRYPI

Programming

- LANGUAGES: PYTHON, C/C++, C#, OBJECTIVE-C, LUA, MATLAB, SQL
- ENVIRONMENTS/TOOLS: ANACONDA, SPYDER, PYCHARM, VISUAL STUDIO, XCODE, ZEROBRANE STUDIO, SQL SERVER, MYSQL

Web

HTML5, AJAX, PHP, JAVASCRIPT, CSS, SQL

Languages

- ENGLISH: HIGHLY PROFICIENT IN SPOKEN AND WRITTEN
- ITALIAN: NATIVE

Scientific Associations / International Organizations

NATO

MEMBER OF THE NATO ACTIVITY IST-169 ROBUSTNESS AND ACCOUNTABILITY IN MACHINE LEARNING SYSTEM

Bruxelles, Belgium

August 2018 - To Date

IAPR

DEPUTY CHIEF FOR THE NEURAL NETWORKS AND DEEP LEARNING TECHNICAL COMMITTEE – INTERNATIONAL ASSOCIATION FOR PATTERN RECOGNITION, ITALIAN CHAPTER

2017 - To Date

IEEE

INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS MEMBER

2011 - To Date

Awards and Grants

Office of Naval Research (ONR)

VISITING FELLOWSHIP

Grant for a Visiting Scientist Program

*Washington, D.C., USA**February 2019*

International Conference on Distributed Smart Cameras

BEST PAPER AWARD NOMINATION

Nomination received for the work entitled "Unsupervised Hashing with Neural Trees for Image Retrieval and Person Re-Identification" by N.

Martinel, G. L. Foresti and C. Micheloni

*Eindhoven, The Netherlands**September 2018*

NVIDIA Corporation

RESEARCH DONATION

Donation of an NVIDIA GPU for a research project on Unsupervised Learning with Neural Trees

*Santa Clara, CA, USA**June 2018*

International Conference on Pattern Recognition

BEST INDUSTRY RELATED PAPER AWARD (BIRPA)

Award received for the work entitled "Distributed and Unsupervised Cost-Driven Person Re-identification" by N. Martinel, G. L. Foresti and C.

Micheloni

*Cancun, Mexico**December 2016*

International Conference on Pattern Recognition

BEST STUDENT PAPER AWARD CANDIDATE

"Distributed and Unsupervised Cost-Driven Person Re-identification" by N. Martinel, G. L. Foresti and C. Micheloni

*Cancun, Mexico**December 2016*

NVIDIA Corporation

RESEARCH DONATION

Donation of an NVIDIA GPU for a research project on Neural Trees, Convolutional Neural Networks and Extreme Learning Machines

*Santa Clara, CA, USA**May 2015*

International Conference on Distributed Smart Cameras

BEST PAPER AWARD

Award received for the work entitled "Sparse Matching of Random Patches for Person Re-Identification" by N. Martinel and C. Micheloni

*Venice, Italy**September 2014*

Invited Seminars and Talks

Deep Learning Meetup

DEEP MACHINE VISION

*Ljubljana, Slovenia**April 2019*

Deep Learning Meetup

NUTS AND BOLTS OF MOBILE FOOD UNDERSTANDING

*Ljubljana, Slovenia**April 2019*

Office of Naval Research/National Research Laboratory

A JOURNEY INTO PERSON RE-IDENTIFICATION

*Washington, D.C., USA**February 2019*

University of Milano-Bicocca

BIOLOGICALLY-INSPIRED HIERARCHICAL LEARNING ARCHITECTURES FOR FOOD UNDERSTANDING

*Milano, Italy**February 2018*

University of Milano-Bicocca

FILL THE GAP FOR NON-CONTINUOUS LONG-TERM TRACKING

*Milano, Italy**February 2018*

University of Udine

DEEP LEARNING: STATE-OF-THE-ART AND PERSPECTIVES

*Udine, Italy**September 2017*

Publications

INTERNATIONAL JOURNALS

From person to group re-identification via unsupervised transfer of sparse features

LISANTI, G., MARTINEL, N., MICHELONI, C., DEL BIMBO, A., AND FORESTI, G. L.

83-84, 2019

Image and Vision Computing

Distributed person re-identification through network-wise rank fusion consensus

MARTINEL, N., FORESTI, G. L., AND MICHELONI, C.

6, 2019

Pattern Recognition Letters

Coverage Control of Multiple Unmanned Aerial Vehicles: A Short Review

HUANG, S., TEO, R., LEONG, W., MARTINEL, N., FORESTI, G. L., AND MICHELONI, C.

6(2), 2018

Unmanned Systems

Accelerated Low-Rank Sparse Metric Learning for Person Re-Identifications

MARTINEL, N.

112, 2018

Pattern Recognition Letters

A UAV Video Dataset for Mosaicking and Change Detection From Low-Altitude Flights

AVOLA, D., CINQUE, L., FORESTI, G. L., MARTINEL, N., PANNONE, D., AND PICIARELLI, C.

To Appear, 2018

IEEE Transactions on Systems, Man, and Cybernetics: Systems

Person Re-Identification in a Distributed Camera Network Framework

MARTINEL, N., FORESTI, G. L., AND MICHELONI, C.

47 (11), 2017

IEEE Transactions on Cybernetics

Discriminant Context Information Analysis for Post-Ranking Person Re-Identification

GARCÍA, J., MARTINEL, N., GARDEL, A., BRAVO, I., FORESTI, G. L., AND MICHELONI, C.

26(4), 2017

IEEE Transactions on Image Processing

A Pool of Multiple Person Re-Identification Experts

MARTINEL, N., MICHELONI, C., AND FORESTI, G. L.

71, 2016

Pattern Recognition Letters

Modeling feature distances by orientation driven classifiers for person re-identification

GARCÍA, J., MARTINEL, N., GARDEL, A., BRAVO, I., FORESTI, G. L., AND MICHELONI, C.

38, 2016

Journal of Visual Communication and Image Representation

A supervised extreme learning committee for food recognition

MARTINEL, N., PICIARELLI, C., AND MICHELONI, C.

148, 2016

Computer Vision and Image Understanding

Re-Identification in the Function Space of Feature Warps

MARTINEL, N., DAS, A., MICHELONI, C., AND ROY-CHOWDHURY, A. K.

37(8), 2015

IEEE Transactions on Pattern Analysis and Machine Intelligence

The Evolution of Neural Learning Systems: A Novel Architecture Combining the Strengths of NTs, CNNs, and ELMs

MARTINEL, N., MICHELONI, C., AND FORESTI, G. L.

1(3), 2015

IEEE Systems, Man, and Cybernetics Magazine

Classification of Local Eigen-Dissimilarities for Person Re-Identification

MARTINEL, N., AND MICHELONI, C.

22(4), 2015

IEEE Signal Processing Letters

On a Distributed Video Surveillance System to Track Persons in Camera Networks

MARTINEL, N.

14(13), 2015

ELCVIA Electronic Letters on Computer Vision and Image Analysis

Kernelized Saliency-Based Person Re-Identification Through Multiple Metric Learning

MARTINEL, N., MICHELONI, C., AND FORESTI, G. L.

24(12), 2015

IEEE Transactions on Image Processing

Person re-identification by modelling principal component analysis coefficients of image dissimilarities

MARTINEL, N., AND MICHELONI, C.

50(14), 2014

Electronics Letters

Camera Selection for Adaptive Human-Computer Interface

MARTINEL, N., MICHELONI, C., PICIARELLI, C., AND FORESTI, G. L.

44(5), 2014

IEEE Transactions on Systems, Man, and Cybernetics: Systems

Robust Painting Recognition and Registration for Mobile Augmented Reality

MARTINEL, N., MICHELONI, C., AND FORESTI, G. L.

20(11), 2013

IEEE Signal Processing Letters

Multi-signature based person re-identification

MARTINEL, N., AND FORESTI, G. L.

48(13), 2012

Electronic Letters

INTERNATIONAL CONFERENCES

Visual Tracking by means of Deep Reinforcement Learning and an Expert Demonstrator

DUNNHOFER, M., MARTINEL, N., FORESTI, G. L., AND MICHELONI, C.

Seoul, South Korea

International Conference on Computer Vision Workshops (ICCV)

October–November, 2019

An Exploration of the Interaction Between capsules with ResNetCaps models

PUCCI, R., MICHELONI, C., ROBERTO, V., FORESTI, G. L., AND MARTINEL, N.

Trento, Italy

International Conference on Distributed Smart Cameras (ICDSC)

September, 2019

An Efficient Artificial Intelligence Framework for UAV System

TOGOOTOGTOKH, E., HUANG, S., LEONG, W. L., TEO, R., FORESTI, G. L., MICHELONI, C., AND MARITNEL, N.

Bali, Indonesia

International Conference on Ubi-Media Computing (Ubi-Media)

August, 2019

Video-Based Convolutional Attention for Person Re-Identification

ZAMPROGNO, M., PASSON, M., MARTINEL, N., SERRA, G., MICHELONI, C., TASSO, C., AND FORESTI, G. L.

Trento, Italy

International Conference on Image Analysis and Processing (ICIAP)

September, 2019

Aggregating Deep Pyramidal Representations for Person Re-Identification

MARTINEL, N., FORESTI, G. L., AND MICHELONI, C.

Long Beach, CA, USA

International Conference on Computer Vision and Pattern Recognition (CVPR)

June, 2019

Unsupervised Smoke Detection in Normally Smoking Environments

CHINI, M., MARTINEL, N., DUNNHOFER, M., CESCHIA, C., AND MICHELONI, C.

Eindhoven, The Netherlands

International Conference on Distributed Smart Cameras (ICDSC)

September, 2018

Unsupervised Hashing with Neural Trees for Image Retrieval and Person Re-Identification

MARTINEL, N., FORESTI, G. L., AND MICHELONI, C.

Eindhoven, The Netherlands

International Conference on Distributed Smart Cameras (ICDSC)

September, 2018

Wide-Slice Residual Networks for Food Recognition

MARTINEL, N., FORESTI, G. L., AND MICHELONI, C.

Lake Tahoe, CA/NV, USA

International Winter Conference on Applications of Computer Vision (WACV)

March, 2018

Group Re-Identification via Unsupervised Transfer of Sparse Features Encoding

LISANTI, G., MARTINEL, N., DEL BIMBO, A., AND FORESTI, G. L.

Venice, Italy

International Conference on Computer Vision (ICCV)

October 2017

- Person Re-Identification via Unsupervised Transfer of Learned Visual Representations** Stanford, CA, USA
MARTINEL, N., DUNNHOFER, M., FORESTI, G. L., AND MICHELONI, C. September 2017
International Conference on Distributed Smart Cameras (ICDSC)
- Temporally Smoothed Anomaly Detection in Continuous Fluids** Stanford, CA, USA
CHINI, M., MARTINEL, N., SPAGNUL, S., AND MICHELONI, C. September 2017
International Conference on Distributed Smart Cameras (ICDSC)
- Aerial Video Surveillance System for Small-Scale UAV Environment Monitoring** Lecce, Italy
AVOLA, D., FORESTI, G. L., MARTINEL, N., MICHELONI, C., PANNONE, D., AND PICIARELLI, C. September 2017
International Conference on Advanced Video and Signal based Surveillance (AVSS)
- Real-Time Incremental and Geo-Referenced Mosaicking by Small-Scale UAVs** Catania, Italy
AVOLA, D., FORESTI, G. L., MARTINEL, N., MICHELONI, C., PANNONE, D., AND PICIARELLI, C. September 2017
International Conference on Image Analysis and Processing (ICIAP)
- Distributed and Unsupervised Cost-Driven Person Re-identification** Cancun, Mexico
MARTINEL, N., FORESTI, G. L., AND MICHELONI, C. December 2016
International Conference on Pattern Recognition (ICPR)
- Temporal Model Adaptation for Person Re-Identification** Amsterdam, The Netherlands
MARTINEL, N., DAS, A., MICHELONI, C., AND ROY-CHOWDHURY, A. K. October 2016
European Conference on Computer Vision (ECCV)
- Mobile Food Recognition with an Extreme Deep Tree** Paris, France
MARTINEL, N., PICIARELLI, C., FORESTI, G. L., AND MICHELONI, C. September 2016
International Conference on Distributed Smart Cameras (ICDSC)
- A Structured Committee for Food Recognition** Santiago, Chile
MARTINEL, N., PICIARELLI, C., MICHELONI, C., AND FORESTI, G. L. December 2015
International Conference on Computer Vision Workshops (ICCV)
- Person Re-Identification Ranking Optimisation by Discriminant Context Information Analysis** Santiago, Chile
GARCIA, J., MARTINEL, N., MICHELONI, C., AND GARDEL, A. December 2015
International Conference on Computer Vision (ICCV)
- On Filter Banks of Texture Features for Mobile Food Classification** Seville, Spain
MARTINEL, N., PICIARELLI, C., MICHELONI, C., AND FORESTI, G. L. September 2015
International Conference on Distributed Smart Cameras (ICDSC)
- Selection of Temporal Features for Event Detection in Smart Security** Genoa, Italy
MARTINEL, N., AVOLA, D., PICIARELLI, C., MICHELONI, C., VERNIER, M., CINQUE, L., AND FORESTI, G. L. September 2015
International Conference on Image Analysis and Processing (ICIAP)
- Sparse Matching of Random Patches for Person Re-Identification** Venice, Italy
MARTINEL, N., AND MICHELONI, C. November 2014
International Conference on Distributed Smart Cameras (ICDSC)
- Mobile Re-Identification Based on Local Features Analysis** Venice, Italy
AKHTAR, Z., MARTINEL, N., MICHELONI, C., AND FORESTI, G. L. November 2014
International Conference on Distributed Smart Cameras (ICDSC)
- Saliency Weighted Features for Person Re-Identification** Zürich, Switzerland
MARTINEL, N., MICHELONI, C., AND FORESTI, G. L. September 2014
European Conference Computer Vision Workshops and Demonstrations (ECCV)
- Person Orientation and Feature Distances Boost Re-Identification** Stockholm, Sweden
GARCIA, J., MARTINEL, N., FORESTI, G. L., GARDEL, A., AND MICHELONI, C. August 2014
International Conference on Pattern Recognition (ICPR)
- Learning Pairwise Feature Dissimilarities for Person Re-Identification** Palm Springs, CA, USA
MARTINEL, N., MICHELONI, C., AND PICIARELLI, C. October-November 2013
International Conference on Distributed Smart Cameras (ICDSC)

Remote Feature Learning for Mobile Re-Identification

VERNIER, M., MARTINEL, N., MICHELONI, C., AND FORESTI, G. L.
International Conference on Distributed Smart Cameras (ICDSC)

Palm Springs, CA, USA

October-November 2013

Outdoor environment monitoring with unmanned aerial vehicles

PICIARELLI, C., MICHELONI, C., MARTINEL, N., VERNIER, M., AND FORESTI, G. L.
International Conference on Image Analysis and Processing (ICIAP)

Naples, Italy

September 2013

Image Processing Supports HCI in Museum Application

MARTINEL, N., VERNIER, M., FORESTI, G. L., AND LAMEDICA, E.
International Conference on Computer Vision Theory and Applications (VISAPP)

Barcelona, Spain

February 2013

Distributed Signature Fusion for Person Re-Identification

MARTINEL, N., MICHELONI, C., AND PICIARELLI, C.
International Conference on Distributed Smart Camera (ICDSC)

Hong Kong, Hong Kong

October-November 2012

Re-identify people in wide area camera network

MARTINEL, N., AND MICHELONI, C.
International Conference on Computer Vision and Pattern Recognition (CVPR)

Providence, RI, USA

June 2012

Pre-Emptive camera activation for Video Surveillance HCI

MARTINEL, N., MICHELONI, C., AND PICIARELLI, C.
International Conference on Image Analysis and Processing (ICIAP)

Ravenna, Italy

September 2011

BOOK CHAPTERS**Low-Level Feature Detectors and Descriptors for Smart Image and Video Analysis: A Comparative Study**

AVOLA, D., CINQUE, L., FORESTI, G. L., MARTINEL, N., PANNONE, D., AND PICIARELLI, C.
Bridging the Semantic Gap in Image and Video Analysis – H. Kwaśnicka and L. C. Jain (Eds.)

Springer

2018

Distributed mobile computer vision: Advances, challenges and applications

MARTINEL, N., PRATI, A., AND MICHELONI, C.
Distributed Embedded Smart Cameras: Architectures, Design and Applications – C. Bobda and S. Velipasalar (Eds.)

Springer

2014

Advanced artificial vision and mobile devices for new applications in learning, entertainment and cultural heritage domains

FORESTI, G. L., MARTINEL, N., MICHELONI, C., AND VERNIER, M.
Interdisciplinary Mechatronics: Engineering Science and Research Development – M. K. Habib and J. P. Davim (Eds.)

Wiley-ISTE

2013

I states, to be informed, in accordance with and for purposes of the Italian Art. 13 of Legislative Decree 196/2003, that the collected personal data will be treated, including by computer, in proceedings to which this declaration is made. Udine, November 27, 2019