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CURRICULUM VITAE

Prof. Gian Luca FORESTI

April 2023

UNIVERSITY OF UDINE
DEPARTMENT OF MATHEMATICS, COMPUTER SCIENCE AND PHYSICS

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1. Personal data

Family name: FORESTI   First name: GIAN LUCA

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2. Professional qualifications and experience

a. Qualifications
a1. Educational Qualifications
- Laurea degree (MS) in Electronic Engineering, University of Genoa, 1990 (summa cum laude).
- Qualification to the Profession of Engineer (State Examination), November 1990.
- Ph.D. degree in Computer Science, University of Genoa, 1994.

a2. Other Qualifications
- Assistant Professor at the Department of Mathematics and Computer Science, University of Udine, Italy, 1995-2001.
- Associate Professor at the Department of Mathematics and Computer Science, University of Udine, Italy, 2001-2005.
- Full Professor at the Department of Mathematics and Computer Science, University of Udine, Italy, 2005.
- Visiting Professor in Artificial Vision, University of Klagenfurt, Austria, 2008-19.
- Dean of the Faculty of Educational Sciences at University of Udine, Italy, 2009-12.
- Deputy Director of the Department of Mathematics and Computer Science, University of Udine, Italy, 2012-15.
- Director of the Department of Mathematics, Computer Science and Physics, University of Udine, Italy, 2016-21.
- Associated Editor for the IEEE Transaction on Circuits and Systems for Video Technology (CSVT) journal, 2016-20.
- Appointment of the Ministry of Defense (General Secretariat of Defense) as Italian Delegate at the Information System Technology (IST) Panel of the North Atlantic Treaty Organization (NATO). This appointment concerns the promotion, coordination and direction of Italian participation in research programs relating to the Information Technology sector within NATO-STO, 2015 -.
- Delegate to the NATO Relationship of the Italian Lab on Artificial Intelligence and Intelligent Systems (AIIS), 2028 -
- President of the Italian Association (IAPR Chapter) of Computer Vision, Pattern Recognition and Machine Learning (CVPL), 2018 - 2022

- Member of the following International Scientific Association: Institute of Electrical and Electronic Engineering (IEEE) (Senior Member), International Association of Pattern Recognition (IAPR) (Fellow Member).

- Member of the Technical Committee of several International Conferences on Computer Vision, Pattern Recognition, Image Processing, Advanced Visual-based Surveillance Systems, Multimedia and Autonomous Vehicle Driving.

- International scientific research prices – (1) Best Automotive Electronics Paper Award of the IEEE Society on Vehicular Technology for the paper "Multisensor Data Fusion for Driving Autonomous Vehicles in Risky Environments", IEEE Transactions on Vehicular Technology, Vol. 51, No. 5, September 2002, pp. 1165 -1185, 2010, (2) Best Paper Award at the International Conference on Distributed Smart Cameras (ICDSC 2010), August 31 – September 4, Atlanta, USA, for the paper "Occlusion-aware multiple camera reconfiguration". (3) Best Industry Related Paper Award (BIRPA) at the International Conference on Pattern Recognition (ICPR 2016), Cancun (Mexico) December 4 – 8, 2016 for the paper "Distributed and Unsupervised Cost-Driven Person Re-Identification", (4) Best Paper Award at the International Conference on Distributed Smart Cameras (ICDSC 2019), September 9-11, Trento, Italy, for the paper "Drone Patrolling with Reinforcement Learning".

- Editor of international books – (1) "Multimedia Video-Based Surveillance Systems: from User Requirements to Research Solutions " Kluwer Academic Publishers, September 2000; (2) "Multisensor Data Fusion in Intelligent Systems ", Kluwer Academic Publishers, Mai 2003; (3) "Ambient Intelligence: A Novel Paradigm" Springer, USA, 2005; (4) "Image Analysis and Processing 2011: Part I and part II", Lecture Notes in Computer Science / Image Processing, Computer Vision, Pattern Recognition, and Graphics, Vol. 6978-79, Springer, 2011.

- Member of Program Committees and member of Technical Program Committees at several international conferences - Finance Chair of 11th IEEE Conference on Image Processing (ICIP05), 11-14 September 2005, Genova, Italy; Program Chair at the 4th ACM/IEEE International Conference on Distributed Smart Cameras (ICDSC10), 31 August – 4 September 2010, Atlanta, USA; *General Chair* at the 8th IEEE Conference on Advanced Video and Signal Based Surveillance (AVSS11), 30 August - 2 September 2011, Klagenfurt, Austria; *General Chair* at the 16th International Conference on Image Analysis and Processing (ICIAP 2011), 14-16 September 2011, Ravenna, Italy.

- Invited speaker at the NATO School on Multisensor and Sensor Data Fusion held in Pitlochry, Scotland, 25 June - 7 July 2000.

- Invited speaker at the Department of Industrial Engineering, University of New York, Buffalo, USA, (invited by Dr. J. Llinas) for a series of seminars entitled "Multisensor video surveillance systems: from blob detection to event analysis", July 2005.

- Invited speaker at the NATO Conference on Explosive Ordnance Disposal (EOD) Demonstrations and Trials (EOD2014), September 30-October 2, 2014, Trencin, Slovak.

- Guest Editor of Special Issue on International journals – (1) "Video Processing and Communications in Real-Time Video-Based Surveillance Systems", Real-Time Imaging, vol. 7, no. 5, 2001 (Academic Press); (2) "Video Communications, Processing and Understanding for Third Generation Surveillance Systems", Proceeding of IEEE, vol. 89, no. 6, 2001; (3) "Non Linear Signal and Image Processing", Applied Signal Processing, Vol. 2004, No. 12, 2004; (5) "Ambient Intelligence", IEEE Transaction on Systems, Man and Cybernetics: Part A- Systems and Humans, Vol. 35, No.1, January, 2005; (6) "Novel Concepts and Challenges for the Next Generation of Video Surveillance Systems", Machine Vision Applications, Vol. 18, No. 3-4, August 2007; (7) "Computer Vision Methods for Ambient Intelligence", Image and Vision Computing

Journal, Vol. 27, No.10, October 2009, (8) "Digital Anastylosis of Frescoes challeNgE" (DAFNE), Pattern Recognition Letters, 2020.

- Reviewer for national and international research programs - CEC-MAST III Program (DGXII) in 1995; ESPRIT-Long Term Research (LTR) Program (DGIII-Industry) from 1995 to 1998; CRAFT (BRITE EURAM III Program), Stage 1 and Stage 2, in 1996; EU Program Information Society Technologies (IST) in 2000; Israel Science Foundation (ISF) in 2006; Engineering and Physical Sciences Research Council (EPSRC), United Kingdom, in 2007; Singaporean Science Research Council (SSRC), Singapore, in 2009; HORIZON 2020 Program.

- Reviewer for the International Scientific Journals: Computational Intelligence Journal, Computer Vision and Image Understanding, IEE Proceedings on Vision, Image and Signal Processing, IEEE Transactions on Aerospace and Electronic Systems, IEEE Transactions on Circuits and Systems for Video Technology, IEEE Transactions on Image Processing, IEEE Transactions on Intelligent Transport Systems, IEEE Transactions on Multimedia, IEEE Transactions on Neural Networks, IEEE Transactions on Pattern Analysis and Machine Intelligence, IEEE Transactions on System, Man and Cybernetics: Part A, Part B and Part C, IEEE Transactions on Vehicular Technology, IEEE Selected Journal on Signal Processing, IEEE Signal Processing Magazine, IEEE Journal on Oceanic Engineering, Image and Vision Computing, Machine Vision and Application, Parallel Computing, Pattern Analysis and Application Journal, Pattern Recognition, Pattern Recognition Letters, Proceeding of IEEE, Signal Processing.

b. Experience:

- Prof. Foresti has been involved in scientific and technical researches in the field of industrial technology since 1989. He has participated to several research projects funded by the Commission of the European Communities (CEC), the National Research Council of Italy (CNR), the Italian Ministry of the University (MURST), the Italian Ministry of the Defense as well as industry, in the area of computer vision, image and signal processing, data fusion, pattern recognition and multimedia.

- Prof. Foresti has participated as research fellow in the following project: MAST program (MAST3-CT97-0079 HOLOMAR High-Resolution in Situ Holographic Recording and Analysis of Marine Organisms and Particles), ESPRIT program (P6068 ATHENA - Advanced Teleoperation for EartHwork Equipment Navigation), CEC-ESPRIT P-5345 DIMUS (Data Integration in Multisensor Systems), CEC-ESPRIT P-8433 PASSWORDS (Parallel and Advanced Real-Time Surveillance System with Operator Assistance for Revealing Dangerous Situations), CEC-VALUE CREW (An Image Processing System for Estimating the Number of Peoples in Crowed Environments), CEC-MAST SNACOW (0029-C/A), BRITE-EURAM BE-2013 VENICE (Virtual Environment Interface by Sensory Integration and Manipulation Control in Multifunctional Underwater Vehicle).

- Prof. Foresti has been scientific responsible of the following projects: (1) BRITE-CRAFT project BRST-CT98-5312 VENFLEX (Visual Recognition and Mechanical Handling of Flexible Materials) (1998-2000), (2) SURFACE TRANSPORT Strep project TST4-CT-2004-516235 MISS (Monitor Integrated Safety System) (2005-2006), (3) IST026-RTG060 NATO project (Advanced Multisensor Surveillance System for Combatting Terrorism) (2002-2006), (4) PASR - Preparatory Action on the enhancement of the European industrial potential in the field of Security research - 204400 HAMLET (Hazardous Material Localisation and Person Tracking) project (2002-2004), (5) Italian Minister of Defense project (Development of an automatic video surveillance system for the analysis, detection, tracking and classification of moving objects and complex events aimed at preventing terrorist activities) (2005-2007); (6) European Defense Agency (EDA) - Collective Survivability Call (Defense R&T Joint Investment Program on Force Protection) project

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A-0380-RT-GC MUSAS (Multi Sensor Anti Sniper System) (2008-2010); (7) Italian Minister of Defense project (Study of an advanced model for the automatic reconfigurability of a network of active sensors to be used in the protection / defense of military bases set up during missions abroad) (2008-2010; (8) National coordinator for the MIUR project (PRIN06) (Intelligent ambient: event understanding, sensor reconfiguration and multimodal interfaces) (2007-2009); (9) European Defense Agency (EDA) - Collective Survivability Call (Defense R&T Joint Investment Program on Force Protection) project A-0444-RT-GC DAFNE (Distributed and Adaptive Multisensor fusion Engine) (2009-2011); (10) European Union – SEE South Est Europe Transnational Cooperation Program project SEE/A/426/1.1 INTERVALUE (Inter-Regional Cooperation for Valorization of Research Results) (2009 – 2012); (11) Italian Minister of Defense project (Study and development of a system for the automatic deployment and reconfiguration of a network of mobile sensors positioned on UAVs for the protection of military convoys, moving patrols and military installations in operating environment) (2012-2015); (12) Italian Minister of Defense project (Augmented Reality for Mobile Applications: support for the movement of patrols in risk areas and intelligent recognition of unexploded ordnance (RA2M)) (2016-2019); (13) International Cooperation between Singapore Minister of Defense – Italian Minister of Defense (PREscriptive Situational awareness for cooperative autoorganizing aerial sensor NETworks (PRESNET)) (2017- 2019). (14) Italian Minister of Defense project (A proactive counter-UAV system to protect army tanks and patrols in urban areas (PROACTIVE COUNTER-UAV) (2020-2022); (15) US Office of Naval Research (ONR) (Target Re-Association for Autonomous Agents (TRAAA)) (2020-22).

3. Research activities and interests
Prof. Foresti has a wide scientific and technical experience in real-time signal and image processing for recognition and understanding of 3D complex scenes (road, underwater, etc.). His main interests involve (a) Person Re-identification and distributed data fusion in multisensor systems, (b) probabilistic and symbolic techniques in signal and image processing, (c) nonlinear signal and image processing, (d) deep neural networks and artificial intelligence, (e) computer vision and multimedia communication. Proposed methods found applications in several fields: - automatic systems for real-time surveillance and monitoring of outdoor environments (e.g., underground stations, airports, railway lines, working environments of autonomous robots, road traffic control) - autonomous vehicle driving (UAV for pipeline or off-shore structure inspection).

Since 2001 Prof. Foresti is director of the Artificial Vision and Real-Time Systems (AVIRES) Lab at the Department of Mathematics and Computer Science, University of Udine, Italy.

Prof. Foresti is author or co-author of more than 450 papers published in International Journals and Conferences in the field of Computer Vision, Image Processing and Pattern Recognition.

Udine, April 4, 2023

Prof. Gian Luca Foresti