

EUROPEAN
CURRICULUM VITAE
FORMAT



PERSONAL INFORMATION

Surname and Name
Email
Nationality
Date of Birth
Personal Web page
Scopus Profile
Google Scholar Profile

COSTANTE GABRIELE

gabriele.costante@gmail.com, gabriele.costante@unipg.it

ITALIAN

18/01/1988

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https://scholar.google.it/citations?user=Uxce_OEAAAAJ&hl=it

EDUCATION AND TRAINING

- Dates (from – to)
Date of qualification
- Name and type of organization providing education and training
- Principal subjects/occupational skills covered
- Title of qualification awarded

November 2012 – February 2016

12/02/2016

Department of Engineering, University of Perugia, via G. Duranti 93, 06125, Perugia (PG), Italy

Ph.D in Information Engineering

Research activities and studies on Machine Learning and Computer Vision approaches for Robotic applications.

Ph.D in Information Engineering

Title of the thesis: “Perception for Robot Navigation: from Visual Learning to Active Vision”

- Dates (from – to)
- Name and type of organization providing education and training
- Title of qualification awarded

November 2015

University of Perugia, Perugia (PG), Italy

Professional certification – Information Engineering

- Dates (from – to)
Date of qualification
- Name and type of organization providing education and training
- Principal subjects/occupational skills covered
- Title of qualification awarded

November 2010 – 18 July 2012

18/07/2012

Department of Engineering, University of Perugia, via G. Duranti 93, 06125, Perugia (PG), Italy

Automation, Computer Engineering, Robotics, Telecommunications

MSc in Information and Automation Engineering with vote 110/110 cum laude

Title of the thesis: “Online Learning Techniques for Semantic Robot Localization”

- Dates (from – to)
Date of qualification

October 2007 – 4 November 2010

04/11/2010

- Name and type of organization providing education and training
- Principal subjects/occupational skills covered
- Title of qualification awarded

Department of Engineering, University of Perugia, via G. Duranti 93, 06125, Perugia (PG), Italy
Electronic and Computer Engineering, Control Engineering

BSc in Information and Electronic Engineering with vote 110/110 cum laude
Title of the thesis: "Development and Implementation of algorithms for EKF-based SLAM"

- Dates (from – to)

September 2002 – July 2007

- Name and type of organization providing education and training
- Title of qualification awarded

Liceo Scientifico Galeazzo Alessi, Perugia (PG), Italy

High School Diploma with vote 100/100

CURRENT EMPLOYMENT

- Dates (from - to)
- Name and address of the employer
- Type of company or sector
- Occupation or position held
 - Main activities and responsibilities

29/11/2022 – present

Department of Engineering, University of Perugia, via G. Duranti 93, 06125, Perugia (PG), Italy

Research and Education

Associate Professor – full-time (art. 24 c.3-b L.240/10)

Research activity on Robotics, Machine Learning, Computer Vision and Control Theory - Teaching activities - Management of thesis and internship activities - Management of research projects with companies on the topics of Robotics, Machine Learning, Computer Vision and Control Theory

WORK EXPERIENCE

- Dates (from – to)
- Name and address of the employer
- Type of company or sector
- Occupation or position held
 - Main activities and responsibilities

29/11/2019 – 28/11/2022

Department of Engineering, University of Perugia, via G. Duranti 93, 06125, Perugia (PG), Italy

Research and Education

Researcher (RTD-B) – full-time (art. 24 c.3-b L.240/10)

Research activity on Robotics, Machine Learning, Computer Vision and Control Theory - Teaching activities - Management of thesis and internship activities - Management of research projects with companies on the topics of Robotics, Machine Learning, Computer Vision and Control Theory

- Dates (from – to)
- Name and address of the employer
- Type of company or sector
- Occupation or position held
- Main tasks and responsibilities

01/01/2019 – 28/11/2019

Department of Engineering, University of Perugia, via G. Duranti 93, 06125, Perugia (PG), Italy

Research and Education

Research Fellow art. 22 of law 30 December 2010, n.240 in the project entitled: "*Machine learning tools applied to robotics and automation*"

Research activity on Robotics, Machine Learning, Computer Vision and Control Theory - Management of thesis and internship activities - Management of research projects with companies on the topics of Robotics, Machine Learning, Computer Vision and Control Theory

- Dates (from – to)

15/12/2015 – 14/12/2018

Name and address of the employer	Department of Engineering, University of Perugia, via G. Duranti 93, 06125, Perugia (PG), Italy
Type of company or sector	Research and Development
Occupation or position held	Research Fellow art. 22 of law 30 December 2010, n.240 in the project entitled: <i>"Development of technologies for knowledge transfer and adaptation between intelligent systems for home automation applications"</i>
Main tasks and responsibilities	Research activity on Robotics, Machine Learning, Computer Vision and Control Theory - Management of thesis and internship activities - Management of research projects with companies on the topics of Robotics, Machine Learning, Computer Vision and Control Theory
Dates (from – to)	01/04/2014 – 30/04/2015
Name and address of the employer	Robotics and Perception Group, University of Zurich, Zurich, Switzerland
Type of company or sector	Research and Development
Occupation or position held	Visiting Researcher (Research Internship)
Main tasks and responsibilities	Research activity on navigation based on Computer Vision algorithms for aerial drones

EDITORIAL BOARDS

Period	February 2020 - present
Role	Associate Editor for the journal
Website	https://www.ieee-ras.org/publications/ra-l/ra-letters-editorial-board
Journal	IEEE Robotics and Automation Letters (IEEE RA-L)

SCIENTIFIC COMMITTEES

Period	December 2021 - present
Role	Chair of the Working Group on Artificial Vision
Website	https://i-rim.it/it
Association	Italian Institute of Robotics and Intelligent Machines (I-RIM)
Period	From September 2024 – January 2025
Role	Conference Associate Editor – Visual Perception and Learning
Website	https://2025.ieee-icra.org/
Conference	26th IEEE International Conference on Robotics and Automation (ICRA 2025)
Period	From September 2023 – January 2024
Role	Conference Associate Editor – Visual Perception and Learning
Website	https://2024.ieee-icra.org/
Conference	25th IEEE International Conference on Robotics and Automation (ICRA 2024)
Period	From February to September 2020
Role	Conference Associate Editor
Website	https://www.micc.unifi.it/icpr2020/
Conference	25 th International Conference on Pattern Recognition (ICPR) 2020

SEMINARS BY INVITATION, WORKSHOP AND PARTICIPATION IN CONFERENCES AS CHAIR

Date	2025
Invited talk title	Deep Reinforcement Learning in Vision-Based Mobile Robotics: Core Principles, Latest Advances, and Causal Inference Strategies for Data Augmentation
Place	Politecnico di Milano, Italy and at Università di Modena e Reggio Emilia, Italy
Date	2022-2024
Workshop title	Organizer of the workshops “Artificial Perception: from current state of the art in research and industry to the next frontiers”; “Artificial Perception: state of the art and beyond”; “Traditional Computer Vision in the Deep Learning Era” at the I-RIM 3D conference of the Robotics and Intelligent Machines Institute.
Event	Italian Conference of Robotics and Intelligent Machines (I-RIM 3D)
Date	2023-2025
Special Session title	Organizer of the special session “Robotics for Agro-Forestry and Landscape Applications”

Event	2023 IEEE International Workshop on Metrology for Agriculture and Forestry
Date	05/11/2023
Seminar title	"Autonomous Mobile Robots for Crop Monitoring"
Event	IEEE international Workshop on Metrology for Agriculture and Forestry
Date	12/07/2022 and 23/06/2023
Seminar title	"Deep Reinforcement Learning: fundamentals and applications to mobile robotics"
Context	National Ph.D. on Artificial Intelligence
Date	25/05/2021
Seminar title	"Robotics and Artificial Intelligence for Precision Agriculture"
Event	Open School "Copernicus, Agriculture 4.0 and environmental and business sustainability"
Date	06/10/2020
Seminar title	"Machine Learning"
Place	Umbria Digital Innovation Hub
Date	10/02/2020
Seminar title	"Introduction to Machine Learning and Data Analysis"
Place	Department of Chemistry of the University of Turin
Activity	Session Chair (by invitation) – Session Title: "Mobile Robots"
Conference	20 th International Conference on Advanced Robotics (ICAR) – 2021 (<i>virtual edition</i>)

ORGANIZATION OF CONFERENCES AND DOCTORAL SCHOOLS

Period	2025
Role	General Chair , Automatica.it 2025
Website	https://automatica2025.it/
Association	Italian Control System Community (SIDRA)
Period	2025
Role	Workshop Chair , I-RIM 3D 2025
Website	https://i-rim.it/it/conferenza-i-rim-3d-2025/
Conference	Italian Community on Robotics and Intelligent Machines (I-RIM)
Period	2024-2026
Role	Member of the Organizing and Scientific Committee, Doctoral Summer School on Robotics and Intelligent Machines (DRIMS)
Website	https://phdrims.com/

SCIENTIFIC PUBLICATIONS

BOOK CHAPTERS (1):

1. "EXPLOITING PHOTOMETRIC INFORMATION FOR PLANNING UNDER UNCERTAINTY", COSTANTE G., DELMERICO J., WERLBERGER M., VALIGI P., SCARAMUZZA D., ROBOTICS RESEARCH, SPRINGER, CHAM, 2018. 107-124.

ARTICLES IN INTERNATIONAL JOURNALS (45):

1. "DATA-BASED REGIONAL STABILIZATION OF LINEAR SYSTEMS WITH SATURATING ACTUATORS." FERRANTE, F., LEOMANNI, M., COSTANTE, G., CROCETTI, F., & FRAVOLINI, M. L. (2026). *AUTOMATICA*, 183, 112642.
2. "TOWARDS TRAJECTORY FOLLOWING AND VISION-BASED COLLISION AVOIDANCE FOR MICRO AERIAL VEHICLES WITH DEEP REINFORCEMENT LEARNING." BRILLI, R., DIONIGI, A., LEGITTIMO, M., CROCETTI, F., LEOMANNI, M., FRAVOLINI, M. L., & COSTANTE, G. (2025). *ROBOTICS AND AUTONOMOUS SYSTEMS*, 105214.
3. "COMPARISON OF DSO AND ORB-SLAM3 IN LOW-LIGHT ENVIRONMENTS WITH AUXILIARY LIGHTING AND DEEP LEARNING BASED IMAGE ENHANCING." CROCETTI, F., BRILLI, R., DIONIGI, A., FRAVOLINI, M. L., COSTANTE, G., & VALIGI, P. (2025). *JOURNAL OF FIELD ROBOTICS*, 42(7), 3748-3771.
4. "SOFT HUMAN-ROBOT HANDOVER USING A VISION-BASED PIPELINE." CASTELLANI, C., TURCO, E., BO, V., MALVEZZI, M., PRATTICHIZZO, D., COSTANTE, G., & POZZI, M. (2024). *IEEE ROBOTICS AND AUTOMATION LETTERS*, 10(2), 891-898.
5. "MANGODETNET: A NOVEL LABEL-EFFICIENT WEAKLY SUPERVISED FRUIT DETECTION FRAMEWORK." DENARDA, A. R., CROCETTI, F., COSTANTE, G., VALIGI, P., & FRAVOLINI, M. L. (2024). *PRECISION AGRICULTURE*, 25(6), 3167-3188.
6. "REFINED WEAKLY SUPERVISED YIELD ESTIMATION THROUGH THE MINILABELNET-COUNT FRAMEWORK." DENARDA, A. R., CROCETTI, F., BRILLI, R., COSTANTE, G., VALIGI, P., & FRAVOLINI, M. L. (2024). *IEEE TRANSACTIONS ON AGRIFOOD ELECTRONICS*, 3(1), 34-42.
7. "COMPUTATION OF REAL-FLUID THERMOPHYSICAL PROPERTIES USING A NEURAL NETWORK APPROACH IMPLEMENTED IN OPENFOAM" SAHRANAVARDFARD, N., AUBAGNAC-KARKAR, D., COSTANTE, G., RAHANTAMIALISOA, F. N., HABCHI, C., & BATTISTONI, M. (2024). *FLUIDS*, 9(3), 56.
8. "AI-DRIVEN GROUND ROBOTS: MOBILE EDGE COMPUTING AND MMWAVE COMMUNICATIONS AT WORK " BARUFFA, G.; DETTI, A.; RUGINI, L.; CROCETTI, F.; BANELLI, P.; COSTANTE, G.; & VALIGI, P. IEEE OPEN JOURNAL OF THE COMMUNICATIONS SOCIETY, 2024.
9. "QUADROTOR CONTROL SYSTEM DESIGN FOR ROBUST MONOCULAR VISUAL TRACKING." LEOMANNI, M.; FERRANTE, F.; DIONIGI, A.; COSTANTE, G.; VALIGI, P.; & FRAVOLINI, M. L. IEEE TRANSACTIONS ON CONTROL SYSTEMS TECHNOLOGY, 2024
10. "D-VAT: END-TO-END VISUAL ACTIVE TRACKING FOR MICRO AERIAL VEHICLES." DIONIGI, A.; FELICIONI, S.; LEOMANNI, M.; & COSTANTE, G. IEEE ROBOTICS AND AUTOMATION LETTERS, 2024.
11. "AI-DRIVEN BLIND SOURCE SEPARATION FOR FAST OPERATIONAL MODAL ANALYSIS OF STRUCTURES." HERNÁNDEZ-GONZÁLEZ, I. A.; GARCÍA-MACÍAS, E.; COSTANTE, G.; & UBERTINI, F. MECHANICAL SYSTEMS AND SIGNAL PROCESSING, 2024.
12. "VISION-BASED TOPOLOGICAL LOCALIZATION FOR MAVs." FELICIONI, S.; RIZZO, B. M.; TORTORICI, C.; & COSTANTE, G. IEEE ROBOTICS AND AUTOMATION LETTERS, 2023.
13. "MA-VID: A MULTISENSOR AUTOMOTIVE VISUAL INERTIAL EVENT DATASET." MOLLIKA, G.; FELICIONI, S.; LEGITTIMO, M.; MELI, L.; COSTANTE, G., & VALIGI, P. IEEE TRANSACTIONS ON INTELLIGENT TRANSPORTATION SYSTEMS, 2023.
14. "DATA-DRIVEN AND UNCERTAINTY-AWARE ROBUST AIRSTRIP SURFACE ESTIMATION", CROCETTI, F.; FRAVOLINI, M.L.; COSTANTE, G.; VALIGI, P.; NEURAL COMPUTING AND APPLICATIONS, 2023.

15. "DEVELOPMENT AND ANALYSIS OF A UWB RELATIVE LOCALIZATION SYSTEM", BRUNACCI, V.; DE ANGELIS, A.; COSTANTE, G.; CARBONE, P.; IEEE TRANSACTIONS ON INSTRUMENTATION AND MEASUREMENT, 2023.
16. "FORECASTING CONSUMER CONFIDENCE THROUGH SEMANTIC NETWORK ANALYSIS OF ONLINE NEWS", FRONZETTI, COLLADON, A.; GRIPPA, F.; GUARDABASCIO, B.; COSTANTE, G.; RAVAZZOLO, F.; SCIENTIFIC REPORTS, 2023.
17. "A CONVEX PROGRAMMING APPROACH TO MULTIPOINT OPTIMAL MOTION PLANNING FOR UNICYCLE ROBOTS", LEOMANNI, M.; MOLLIKA, G.; DIONIGI, A.; VALIGI, P.; COSTANTE, G.; IEEE CONTROL SYSTEMS LETTERS, 2023.
18. "ARD-VO: AGRICULTURAL ROBOT DATA SET OF VINEYARDS AND OLIVE GROVES", CROCETTI, F.; BELLOCCHIO, E.; DIONIGI, A.; FELICIONI, S.; COSTANTE, G.; FRAVOLINI, M.L.; VALIGI, P.; JOURNAL OF FIELD ROBOTICS, 2023.
19. "INTEGRATING SPARSE LEARNING-BASED FEATURE DETECTORS INTO SIMULTANEOUS LOCALIZATION AND MAPPING—A BENCHMARK STUDY", MOLLIKA, G.; LEGITTIMO, M.; DIONIGI, A.; COSTANTE, G.; VALIGI, P.; SENSORS, 2023.
20. "A BENCHMARK ANALYSIS OF DATA-DRIVEN AND GEOMETRIC APPROACHES FOR ROBOT EGO-MOTION ESTIMATION", LEGITTIMO, M.; FELICIONI, S.; BAGNI, F.; TAGLIAVINI, A.; DIONIGI, A.; GATTI, F.; VERUCCHI, M.; COSTANTE, G.; BERTOGNA, M.; JOURNAL OF FIELD ROBOTICS, 2023.
21. "ROBUST MULTIPLE FAULT ISOLATION BASED ON PARTIAL-ORTHOGONALITY CRITERIA", CARTOCCI, N.; CROCETTI, F.; COSTANTE, G.; VALIGI, P.; FRAVOLINI, M.L.; INTERNATIONAL JOURNAL OF CONTROL, AUTOMATION AND SYSTEMS, 2022.
22. "AIRCRAFT ROBUST DATA-DRIVEN MULTIPLE SENSOR FAULT DIAGNOSIS BASED ON OPTIMALITY CRITERIA", CARTOCCI, N.; NAPOLITANO, M. R.; CROCETTI, F.; COSTANTE, G.; VALIGI, P.; FRAVOLINI, M.L.; MECHANICAL SYSTEMS AND SIGNAL PROCESSING, 2022.
23. "DATA-DRIVEN FAULT DIAGNOSIS TECHNIQUES: NON-LINEAR DIRECTIONAL RESIDUAL VS. MACHINE-LEARNING-BASED METHODS", CARTOCCI, N.; NAPOLITANO, M. R.; CROCETTI, F.; COSTANTE, G.; VALIGI, P.; FRAVOLINI, M.L. SENSORS, 2022.
24. "A NOVEL VISION-BASED WEAKLY SUPERVISED FRAMEWORK FOR AUTONOMOUS YIELD ESTIMATION IN AGRICULTURAL APPLICATIONS", BELLOCCHIO, E.; CROCETTI, F.; COSTANTE, G.; FRAVOLINI, M.L.; VALIGI, P.; ENGINEERING APPLICATIONS OF ARTIFICIAL INTELLIGENCE, 2022.
25. "TIME-OPTIMAL CONTROL OF A MULTIDIMENSIONAL INTEGRATOR CHAIN WITH APPLICATIONS", LEOMANNI, M.; COSTANTE, G.; FERRANTE, F.; IEEE CONTROL SYSTEMS LETTERS, 2022.
26. "AUTONOMOUS SINGLE-IMAGE DRONE EXPLORATION WITH DEEP REINFORCEMENT LEARNING AND MIXED REALITY", DEVO, A.; MAO, J.; COSTANTE, G.; LOIANNO, G.; IEEE ROBOTICS AND AUTOMATION LETTERS, 2022.
27. "E-VAT: AN ASYMMETRIC END-TO-END APPROACH TO VISUAL ACTIVE EXPLORATION AND TRACKING", DIONIGI, A.; DEVO, A.; GUIDUCCI, L.; COSTANTE, G., IEEE ROBOTICS AND AUTOMATION LETTERS, 2022.
28. "ENHANCING CONTINUOUS CONTROL OF MOBILE ROBOTS FOR END-TO-END VISUAL ACTIVE TRACKING", DEVO, A.; DIONIGI, A.; COSTANTE, G., ROBOTICS AND AUTONOMOUS SYSTEMS, 2021.
29. "A COMPREHENSIVE CASE STUDY OF DATA-DRIVEN METHODS FOR ROBUST AIRCRAFT SENSOR FAULT ISOLATION", CARTOCCI, N.; NAPOLITANO, M. R.; COSTANTE, G.; FRAVOLINI, M. L., SENSORS, 2021.
30. "DATA-BASED DESIGN OF ROBUST FAULT DETECTION AND ISOLATION RESIDUALS VIA LASSO OPTIMIZATION AND BAYESIAN FILTERING", CASCIANELLI, S.; COSTANTE, G.; CROCETTI, F.; RICCI, E.; VALIGI, P.; FRAVOLINI, M. L., ASIAN JOURNAL OF CONTROL, 2021.
31. "UNCERTAINTY ESTIMATION FOR DATA-DRIVEN VISUAL ODOMETRY", COSTANTE, G.; MANCINI, M., IEEE TRANSACTIONS ON ROBOTICS, 2020.
32. "TOWARDS GENERALIZATION IN TARGET-DRIVEN VISUAL NAVIGATION BY USING DEEP REINFORCEMENT LEARNING", DEVO, A.; MEZZETTI, G.; COSTANTE, G.; FRAVOLINI, M. L.; VALIGI, P., IEEE TRANSACTIONS ON ROBOTICS, 2020.

33. "INTERVAL PREDICTION MODELS FOR DATA-DRIVEN DESIGN OF AERIAL VEHICLE'S ROBUST ADAPTIVE CONTROLLERS", FRAVOLINI, M. L.; COSTANTE, G.; YUCELEN, T.; NAPOLITANO, M. R., JOURNAL OF GUIDANCE, CONTROL, AND DYNAMICS, 2020.
34. "COMBINING DOMAIN ADAPTATION AND SPATIAL CONSISTENCY FOR UNSEEN FRUITS COUNTING: A QUASI-UNSUPERVISED APPROACH", BELLOCCHIO, E.; COSTANTE, G.; CASCIANELLI, S.; FRAVOLINI, M. L.; VALIGI, P., IEEE ROBOTICS AND AUTOMATION LETTERS, 2020.
35. "DEEP REINFORCEMENT LEARNING FOR INSTRUCTION FOLLOWING VISUAL NAVIGATION IN 3D MAZE-LIKE ENVIRONMENTS", DEVO, A.; COSTANTE, G.; VALIGI, P., IEEE ROBOTICS AND AUTOMATION LETTERS, 2020
36. "WEAKLY SUPERVISED FRUIT COUNTING FOR YIELD ESTIMATION USING SPATIAL CONSISTENCY", ENRICO BELLOCCHIO E., CIARFUGLIA T. A., COSTANTE G., VALIGI P., IEEE ROBOTICS AND AUTOMATION LETTERS, 2019
37. "THE ROLE OF THE INPUT IN NATURAL LANGUAGE VIDEO DESCRIPTION", CASCIANELLI S., COSTANTE G., DEVO A., CIARFUGLIA T. A., VALIGI P., FRAVOLINI M. L., IEEE TRANSACTIONS ON MULTIMEDIA, 2019
38. "LS-VO: LEARNING DENSE OPTICAL SUBSPACE FOR ROBUST VISUAL ODOMETRY ESTIMATION", COSTANTE G., CIARFUGLIA T. A., IEEE ROBOTICS AND AUTOMATION LETTERS, 2018.
39. "J-MOD2: JOINT MONOCULAR OBSTACLE DETECTION AND DEPTH ESTIMATION", MANCINI M., COSTANTE G., VALIGI P., CIARFUGLIA T. A., IEEE ROBOTICS AND AUTOMATION LETTERS, 2018.
40. "FULL-GRU NATURAL LANGUAGE VIDEO DESCRIPTION FOR SERVICE ROBOTICS APPLICATIONS", CASCIANELLI S., COSTANTE G., CIARFUGLIA T. A., VALIGI P., FRAVOLINI M. L., IEEE ROBOTICS AND AUTOMATION LETTERS, 2018.
41. "TOWARDS DOMAIN INDEPENDENCE FOR LEARNING-BASED MONOCULAR DEPTH ESTIMATION", MANCINI, M.; COSTANTE, G.; VALIGI, P.; CIARFUGLIA, T.A.; DELMERICO, J; SCARAMUZZA, D., IEEE ROBOTICS AND AUTOMATION LETTERS, 2017.
42. "ROBUST VISUAL SEMI-SEMANTIC LOOP CLOSURE DETECTION BY A COVISIBILITY GRAPH AND CNN FEATURES", CASCIANELLI, S.; COSTANTE, G.; BELLOCCHIO, E.; VALIGI, P.; FRAVOLINI, M. L.; CIARFUGLIA, T. A., ROBOTICS AND AUTONOMOUS SYSTEMS, 92, 53- 65, 2017.
43. "EXPLORING REPRESENTATION LEARNING WITH CNNs FOR FRAME-TO-FRAME EGOMOTION ESTIMATION", COSTANTE, G.; MANCINI, M.; VALIGI, P; CIARFUGLIA, T.A., IEEE ROBOTICS AND AUTOMATION LETTERS, 2016. BEST VISION PAPER FINALIST NELLA CONFERENZA INTERNATIONAL CONFERENCE ON ROBOTICS AND AUTOMATION, 2016
44. "TRANSFERRING KNOWLEDGE ACROSS ROBOTS: A RISK SENSITIVE APPROACH", COSTANTE, G.; CIARFUGLIA, T.A.; VALIGI, P; RICCI, E., ROBOTICS AND AUTONOMOUS SYSTEMS, ELSEVIER, 2015.
45. "EVALUATION OF NON-GEOMETRIC METHODS FOR VISUAL ODOMETRY, CIARFUGLIA", T.A.; COSTANTE, G.; VALIGI, P; RICCI, E., ROBOTICS AND AUTONOMOUS SYSTEMS, ELSEVIER, 2014

ARTICLES IN CONFERENCES (36):

1. "INTEGRATING ROBOTICS AND IMMERSIVE TECHNOLOGIES FOR AUTOMATED STRUCTURAL MONITORING." FELICIONI, S., CASTELLANI, M., COSTANTE, G., MONTECCHIANI, M. F., CAVALAGLI, N., & VENANZI, I. (2026). *PROCEDIA STRUCTURAL INTEGRITY*, 78, 1285-1292.
2. "ENHANCING COUNTERFACTUAL DATA AUGMENTATION FOR OFFLINE REINFORCEMENT LEARNING IN VISION-BASED CONTROL." BRILLI, R., SPEZIALI, P., DIONIGI, A., CROCETTI, F., & COSTANTE, G. (2025, AUGUST). IN *2025 IEEE 21ST INTERNATIONAL CONFERENCE ON AUTOMATION SCIENCE AND ENGINEERING (CASE)* (PP. 1417-1422). IEEE.
3. "ACTIVE ILLUMINATION FOR VISUAL EGO-MOTION ESTIMATION IN THE DARK." CROCETTI, F., DIONIGI, A., BRILLI, R., COSTANTE, G., & VALIGI, P. (2025, MAY). IN *2025 IEEE INTERNATIONAL CONFERENCE ON ROBOTICS AND AUTOMATION (ICRA)* (PP. 14087-14093). IEEE.

4. "ALMOST GLOBAL TRAJECTORY TRACKING FOR QUADROTORS USING THRUST DIRECTION CONTROL ON S 2." LEOMANNI, M., DIONIGI, A., FERRANTE, F., VALIGI, P., & COSTANTE, G. (2024, DECEMBER). IN *2024 IEEE 63RD CONFERENCE ON DECISION AND CONTROL (CDC)* (PP. 7516-7521). IEEE.
5. "SHD-O 2 D: A NOVEL IMAGE DATASET FOR SUPER-HIGH-DENSITY OLIVE ORCHARD YIELD ESTIMATION." DENARDA, A. R., MARCHIONNI, D., CROCETTI, F., COSTANTE, G., VALIGI, P., FAMIANI, F., & FRAVOLINI, M. L. (2024, OCTOBER). IN *2024 IEEE INTERNATIONAL WORKSHOP ON METROLOGY FOR AGRICULTURE AND FORESTRY (METROAGRIFOR)* (PP. 313-318). IEEE.
6. "LF 2 SLAM: LEARNING-BASED FEATURES FOR VISUAL SLAM." LEGITTIMO, M., CROCETTI, F., FRAVOLINI, M. L., MOLLIKA, G., & COSTANTE, G. (2024, OCTOBER). IN *2024 IEEE/RSJ INTERNATIONAL CONFERENCE ON INTELLIGENT ROBOTS AND SYSTEMS (IROS)* (PP. 5648-5655). IEEE.
7. "THE POWER OF INPUT: BENCHMARKING ZERO-SHOT SIM-TO-REAL TRANSFER OF REINFORCEMENT LEARNING CONTROL POLICIES FOR QUADROTOR CONTROL." DIONIGI, A., COSTANTE, G., & LOIANNO, G. (2024, OCTOBER). IN *2024 IEEE/RSJ INTERNATIONAL CONFERENCE ON INTELLIGENT ROBOTS AND SYSTEMS (IROS)* (PP. 11812-11818). IEEE.
8. "INFRASTRUCTURE-LESS UWB-BASED ACTIVE RELATIVE LOCALIZATION." BRUNACCI, V., DIONIGI, A., DE ANGELIS, A., & COSTANTE, G. (2024, OCTOBER). IN *2024 IEEE/RSJ INTERNATIONAL CONFERENCE ON INTELLIGENT ROBOTS AND SYSTEMS (IROS)* (PP. 14079-14086). IEEE.
9. "INTEGRATING OCCUPANCY GRID WITH SEMANTIC ROAD INFORMATION FOR AUTONOMOUS NAVIGATION IN URBAN SCENARIOS: A BENCHMARK STUDY." FELICIONI, S., BURANI, E., LEOMANNI, M., FRAVOLINI, M. L., VALIGI, P., & COSTANTE, G. (2024, AUGUST). IN *2024 IEEE 20TH INTERNATIONAL CONFERENCE ON AUTOMATION SCIENCE AND ENGINEERING (CASE)* (PP. 2665-2671). IEEE.
10. "EXPLORING DEEP REINFORCEMENT LEARNING FOR ROBUST TARGET TRACKING USING MICRO AERIAL VEHICLES." DIONIGI, A.; LEOMANNI, M.; SAVIOLO, A.; LOIANNO, G.; & COSTANTE, G. 21ST IEEE INTERNATIONAL CONFERENCE ON ADVANCED ROBOTICS (ICAR), 2023
11. "ENHANCING WEAKLY SUPERVISED YIELD ESTIMATION THROUGH LEARN-TO-PAY-ATTENTION MODULE." DENARDA, A. R.; CROCETTI, F.; COSTANTE, G.; VALIGI, P.; & FRAVOLINI, M. L. IEEE INTERNATIONAL WORKSHOP ON METROLOGY FOR AGRICULTURE AND FORESTRY (METROAGRIFOR) 2023.
12. "GAPT: GAUSSIAN PROCESS TOOLKIT FOR ONLINE REGRESSION WITH APPLICATION TO LEARNING QUADROTOR DYNAMICS." CROCETTI, F.; MAO, J.; SAVIOLO, A.; COSTANTE, G.; & LOIANNO, G. IEEE INTERNATIONAL CONFERENCE ON ROBOTICS AND AUTOMATION (ICRA), 2023.
13. "MONOCULAR REACTIVE COLLISION AVOIDANCE FOR MAV TELEOPERATION WITH DEEP REINFORCEMENT LEARNING" BRILLI, R.; LEGITTIMO, M.; CROCETTI, F.; LEOMANNI, M.; FRAVOLINI, M.L.; COSTANTE, G.; AIAA SCITECH 2023 FORUM, 2023
14. "ROBUST OUTPUT FEEDBACK CONTROL OF A QUADROTOR UAV FOR AUTONOMOUS VISION-BASED TARGET TRACKING" LEOMANNI, M.; FERRANTE, F.; CARTOCCI, N.; COSTANTE, G.; FRAVOLINI, M.L.; DOGAN, K.M.; YUCELEN, T.; AIAA SCITECH 2023 FORUM, 2023
15. "DEVELOPMENT OF A COOPERATIVE LOCALIZATION SYSTEM USING A UWB NETWORK AND BLE TECHNOLOGY" BRUNACCI, V.; DE ANGELIS, A.; COSTANTE, G.; IEEE INTERNATIONAL SYMPOSIUM ON MEASUREMENTS & NETWORKING (M&N), 2022
16. "CLASSIFICATION OF THYROID DISEASES USING MACHINE LEARNING AND BAYESIAN GRAPH ALGORITHMS" MOLLIKA, G.; FRANCESCONI, D.; COSTANTE, G.; MORETTI, S.; GIANNINI, R.; PUXEDDU, E.; VALIGI, P.; IFAC-PAPERSONLINE 2022
17. "LINEAR CONTROL OF A NONLINEAR AEROSPACE SYSTEM VIA EXTENDED DYNAMIC MODE DECOMPOSITION" CARTOCCI, N.; MONARCA, A.; COSTANTE, G.; FRAVOLINI, M.L.; DOGAN, K. M.; YUCELEN, T.; AIAA SCITECH 2022 FORUM
18. "MONOCULAR REACTIVE COLLISION AVOIDANCE BASED ON FORCE FIELDS FOR ENHANCING THE TELEOPERATION OF MAVS" BRILLI, R.; POZZI, M.; GIORGETTI, F.; FRAVOLINI, M.L.; VALIGI, P.; PRATTICCHIZZO, D.; COSTANTE, G.; 20TH INTERNATIONAL CONFERENCE ON ADVANCED ROBOTICS - DICEMBRE 6-10, 2021. LJUBLJANA, SLOVENIA

19. "DATA-DRIVEN SENSOR FAULT DIAGNOSIS BASED ON NONLINEAR ADDITIVE MODELS AND LOCAL FAULT SENSITIVITY". CARTOCCI, N.; CROCETTI, F.; COSTANTE, G.; VALIGI, P.; NAPOLITANO, M.; FRAVOLINI, M.L.; 20TH INTERNATIONAL CONFERENCE ON ADVANCED ROBOTICS - DICEMBRE 6-10, 2021. LJUBLJANA, SLOVENIA
20. "GOLN: GRAPH OBJECT-BASED LOCALIZATION NETWORK". FELICIONI, S.; LEGITTIMO, M.; FRAVOLINI, M.L.; COSTANTE, G.; 20TH INTERNATIONAL CONFERENCE ON ADVANCED ROBOTICS - DICEMBRE 6-10, 2021. LJUBLJANA, SLOVENIA
21. "TIRE-ROAD FRICTION ESTIMATION AND UNCERTAINTY ASSESSMENT TO IMPROVE ELECTRIC AIRCRAFT BRAKING SYSTEM", CROCETTI, F.; COSTANTE, G.; FRAVOLINI, M. L.; VALIGI, P., IEEE 28TH MEDITERRANEAN CONFERENCE ON CONTROL AND AUTOMATION (MED), 2021.
22. "A ROBUST DATA-DRIVEN FAULT DIAGNOSIS SCHEME BASED ON RECURSIVE DEMPSTER-SHAFER COMBINATION RULE", CARTOCCI, N.; NAPOLITANO, M.R.; COSTANTE, G.; CROCETTI, F.; VALIGI, P.; FRAVOLINI, M. L., IEEE 28TH MEDITERRANEAN CONFERENCE ON CONTROL AND AUTOMATION (MED), 2021.
23. "A DATA-DRIVEN SLIP ESTIMATION APPROACH FOR EFFECTIVE BRAKING CONTROL UNDER VARYING ROAD CONDITIONS"., CROCETTI, F.; COSTANTE, G.; FRAVOLINI, M. L.; VALIGI, P. IEEE 28TH MEDITERRANEAN CONFERENCE ON CONTROL AND AUTOMATION (MED), 2020.
24. "PCA METHODS AND EVIDENCE BASED FILTERING FOR ROBUST AIRCRAFT SENSOR FAULT DIAGNOSIS"., CARTOCCI, N.; COSTANTE, G.; NAPOLITANO, M. R.; VALIGI, P.; CROCETTI, F.; FRAVOLINI, M. L., IEEE 28TH MEDITERRANEAN CONFERENCE ON CONTROL AND AUTOMATION (MED), 2020.
25. "DATA-BASED DESIGN OF ROBUST FAULT ISOLATION RESIDUALS USING LASSO OPTIMIZATION". CASCIANELLI S., CROCETTI F., COSTANTE G., VALIGI P. AND FRAVOLINI M.L. IEEE INTERNATIONAL CONFERENCE ON CONTROL, AUTOMATION AND DIAGNOSIS, 2019
26. "EXPERIMENTAL PREDICTION INTERVALS FOR MONITORING WIND TURBINES: AN ENSEMBLE APPROACH". CASCIANELLI S., ASTOLFI D., COSTANTE G., CASTELLANI F. AND FRAVOLINI M.L. IEEE INTERNATIONAL CONFERENCE ON CONTROL, AUTOMATION AND DIAGNOSIS, 2019
27. "VISUAL LOCALIZATION IN THE PRESENCE OF APPEARANCE CHANGES USING THE PARTIAL ORDER KERNEL". ABDOLLAHYAN M., CASCIANELLI S., BELLOCCHIO E., COSTANTE G., CIARFUGLIA T.A., BIANCONI F., SMERALDI F., FRAVOLINI M.L. 26TH EUROPEAN SIGNAL PROCESSING CONFERENCE (EUSIPCO), 2018
28. "TOWARDS MONOCULAR DIGITAL ELEVATION MODEL (DEM) ESTIMATION BY CONVOLUTIONAL NEURAL NETWORKS-APPLICATION ON SYNTHETIC APERTURE RADAR IMAGES". COSTANTE G., CIARFUGLIA T.A., BIONDI F. EUSAR 12TH EUROPEAN CONFERENCE ON SYNTHETIC APERTURE RADAR, 2018
29. "FAST ROBUST MONOCULAR DEPTH ESTIMATION FOR OBSTACLE DETECTION WITH FULLY CONVOLUTIONAL NETWORKS", MANCINI, M.; COSTANTE, G.; VALIGI, P.; CIARFUGLIA, T.A., IEEE/RSJ INTERNATIONAL CONFERENCE ON INTELLIGENT ROBOTCS AND SYSTEMS, 2016.
30. "SMARTSEAL: A ROS BASED HOME AUTOMATION FRAMEWORK FOR HETEROGENEOUS DEVICES INTERCONNECTION IN SMART BUILDINGS", BELLOCCHIO, E.; COSTANTE, G.; CASCIANELLI, S.; VALIGI, P.; CIARFUGLIA, T.A., IEEE INTERNATIONAL CONFERENCE SMART CITIES CONFERENCE, 2016.
31. "A ROBUST SEMI-SEMANTIC APPROACH FOR VISUAL LOCALIZATION IN URBAN ENVIRONMENT", CASCIANELLI, S.; COSTANTE, G.; BELLOCCHIO, E.; VALIGI, P.; FRAVOLINI, M.L.; CIARFUGLIA, T.A., IEEE INTERNATIONAL CONFERENCE SMART CITIES CONFERENCE, 2016
32. "PERSONALIZING VISION-BASED GESTURAL INTERFACES FOR HRI WITH UAVS: A TRANSFER LEARNING APPROACH", GABRIELE COSTANTE, ENRICO BELLOCCHIO, PAOLO VALIGI AND ELISA RICCI, IEEE/RSJ INTERNATIONAL CONFERENCE ON INTELLIGENT ROBOTS AND SYSTEMS (IROS), CHICAGO, U.S.A.
33. "PERSONALIZING A SMARTWATCH-BASED GESTURE INTERFACE WITH TRANSFER LEARNING", GABRIELE COSTANTE, LORENZO PORZI, OSWALD LANZ, PAOLO VALIGI, ELISA RICCI, EUROPEAN SIGNAL PROCESSING CONFERENCE (EUSIPCO), LISBON, PORTUGAL. 2014

34. "EXPLOITING TRANSFER LEARNING FOR PERSONALIZED VIEW INVARIANT GESTURE RECOGNITION", GABRIELE COSTANTE, VALERIO GALIENI, YAN YAN, MARIO LUCA FRAVOLINI, ELISA RICCI, PAOLO VALIGI, IEEE INTERNATIONAL CONFERENCE ON ACOUSTICS, SPEECH AND SIGNAL PROCESSING (ICASSP), FLORENCE, ITALY.
35. "TRANSFER LEARNING FOR VISUAL PLACE CLASSIFICATION", COSTANTE, G.; CIARFUGLIA, T.A.; VALIGI, P. AND RICCI, E., RSS WORKSHOP ON ROBOTS IN CLUTTER: PREPARING ROBOTS FOR THE REAL WORLD. 2013.
36. "A TRANSFER LEARNING APPROACH FOR MULTI-CUE SEMANTIC PLACE RECOGNITION", COSTANTE, G.; CIARFUGLIA, T.A; VALIGI, P.; RICCI, E., INTELLIGENT ROBOTS AND SYSTEMS (IROS), 2013. 2012 A DISCRIMINATIVE APPROACH FOR APPEARANCE BASED LOOP CLOSING, CIARFUGLIA, T.A; COSTANTE, G.; VALIGI, P.; RICCI, E., INTELLIGENT ROBOTS AND SYSTEMS (IROS), 2012.

AWARDS

Date of Achievement Recognition	08/11/2024 National scientific certification (ASN) for SC 09/G1 – SSD ING-INF/04 for the functions of university full professor
Date of Achievement Recognition	13/11/2020 National scientific certification (ASN) for SC 09/G1 – SSD ING-INF/04 for the functions of university associate professor
Date of achievement Recognition	28/02/2020 2020 Robotics Travel Award for research activity and scientific curriculum. Award size: 800 CHF - Awarded by: international journal <i>Robotics</i> - MDPI
Date of achievement Recognition	01/11/2018 Outstanding Reviewer Award , presented by the Elsevier journal, <i>Robotics and Autonomous Systems</i> for the contribution as a reviewer.
Date of achievement Recognition	19/05/2016 Best vision paper award – Finalist for the paper “Exploring Representation Learning with CNNs for Frame-to-Frame Ego Motion Estimation” in the IEEE International Conference on Robotics And Automation (ICRA) 2016

REVIEWER ACTIVITIES

International Journals	IEEE Robotics and Automation Letters, IEEE Transactions on Robotics, IEEE Transactions on Industrial Informatics, IEEE Access, IEEE Robotics and Automation Magazine, IEEE Transactions on Computational Imaging, Pattern Recognition, Pattern Recognition Letters, Autonomous Robot, Robotics and Autonomous System, Journal on Intelligent Service Robotics, Engineering Applications of Artificial Intelligence, IEEE Sensors.
International Conferences	International Conference on Intelligent Robots and Systems (IROS) – (various editions); IEEE International Conference on Robotics and Automation (ICRA) – (various editions); IEEE 20th International Conference on Advanced Robotics (ICAR) – (2021)

UNIVERSITY TEACHING

Date (from – to)	A.A. 2023-2024 – today
Name and address of the employer	Department of Engineering, University of Perugia, via G. Duranti 93, 06125, Perugia (PG), Italy
Occupation or position held	Lecturer
Assignment information	Lecturer of "Laboratorio Informativo di Segnali e Sistemi", Bachelor's Degree in Information and Electronic Engineering (L-8) , duration: 27 hours
Date (from – to)	A.A. 2020-2021 – today
Name and address of the employer	Department of Engineering, University of Perugia, via G. Duranti 93, 06125, Perugia (PG), Italy
Occupation or position held	Lecturer
Assignment information	Lecturer of " Machine Learning and Data Analysis", Master's Degree in Computer Engineering and Robotics (LM-32) , duration: 72 hours
Date (from – to)	A.A. 2023-2024 – today
Name and address of the employer	Department of Engineering, University of Perugia, via G. Duranti 93, 06125, Perugia (PG), Italy
Occupation or position held	Lecturer
Assignment information	Lecturer of " Deep Learning and Robot Perception", Master's Degree in Computer Engineering and Robotics (LM-32) , duration: 72 hours
Date (from – to)	A.A. 2020-2021
Name and address of the employer	Department of Engineering, University of Perugia, via G. Duranti 93, 06125, Perugia (PG), Italy
Occupation or position held	Lecturer
Assignment information	Lecturer of "Computer Vision and Robot Perception", Master's Degree in Computer Engineering and Robotics (LM-32) , duration: 48 hours
Date (from - to)	A.A. 2017-2018, 2018-2019, 2019-2020
Employer	Department of Engineering, University of Perugia, via G. Duranti 93, 06125, Perugia (PG), Italy
Type of use	Lecturer
Assignment information	Lecturer of "Computer Vision", Master's Degree in Computer Engineering and Robotics (LM-32) , duration: 48 hours
Date	28/06/2015
Employer	Department of Engineering, University of Perugia, via G. Duranti 93, 06125, Perugia (PG), Italy
Type of use	Lecturer
Assignment information	Seminar entitled "Computer vision for robotic and UAV applications", within the international doctoral school IEEE Advanced course for graduate students and industrial research.

PROFESSIONAL TEACHING

Date (from - to)	2019 and 2020
Employer	ITS Umbria Smart Academy, Via Palermo, 80/A 06124 Perugia
Type of use	Teaching Assignment
Assignment information	Teacher of the module "Big Data Management and Analytics", as part of the training course "Technician for Automation and Mechatronic Systems with specialization in the Development of Technologies for Industry 4.0".

Data	06/06/2019
Employer	Training Systems Confindustria Umbria (SFCU), via Palermo 80/A, Perugia (PG)
Type of use	Teaching Assignment
Assignment information	Teaching within the module "Big Data Management & Machine Learning".

INSTITUTIONAL ROLES

Date (from – to)	A.A. 2025 – today
Name of the employer	University of Perugia, Perugia (PG), Italy
Occupation or position held	UNIPG Sub-Delegate for Artificial Intelligence
Assignment information	Promoting and coordinating the uptake of AI in research across the University.

RESPONSIBILITIES AND PARTICIPATION IN FUNDED PROJECTS

Date (from -to)	May 2025 – October 2025
Role	Scientific PI
Project	“Visual Active Tracking for Micro Aerial Vehicles” vision-based active tracking for MAVs within the PNRR “Connected and Autonomous Vehicle (CAV)” framework. Funding from national funding (PNRR – ERC Sector PE6 – European Union – NextGenerationEU).
Date (from -to)	November 2023 – present
Role	Substitute PI and Local Research Unit Responsible
Project	PRIN 2022 PNRR project “LiSA - Listen, See and Act: fusing audio-video cues to perceive visible and invisible events and develop perception-to-action solutions for autonomous vehicles”, PRIN 2022 PNRR Call - Avviso MUR n. 1409 del 14-09-2022 – ERC Sector PE6 – funded by European Union- NextGenerationEU
Date (from-to)	October 2023 – present
Role	Scientific PI
Project	“MiRA: Mixed Reality and AI Methodologies for Immersive Robotics” funded by the University of Perugia
Date (from - to)	July 2020 to December 2021
Role	Technical Manager for the Department of Engineering of the University of Perugia and sole representative of the academic subjects within the Technical Committee of the AGROBOT Network
Project	"AGROBOT: autonomous robots at the service of economic growth and environmental sustainability of Umbrian agriculture". The project is funded by the Umbria region through the 2014-2020 PSR call – Measure 16 – Submeasure 16.2 – Networks or Poles.
Date (from - to)	June 2020 to December 2021
Role	Technical Manager for the Department of Engineering of the University of Perugia
Project	"Integration of autonomous functionalities in an electric vehicle and interoperability with the "smart road" infrastructure". The project, entrusted by the National Agency for New Technologies, Energy and Sustainable Economic Development (ENEA), is funded by MISE under the 2019-2021 Program Agreement for research and development activities of general interest for the national electricity system: Objective "Technologies", research theme "1.7 Technologies for the penetration of the electric carrier in end uses".
Date (from - tp)	2015-present

Role	Participation on various research projects with different companies and industries.
SERVICE ACTIVITIES AT THE UNIVERSITY	
Date (da - a) Assignment	2020 to present Member of the Board of Professors of the PhD Course in Industrial and Information Engineering of the University of Perugia
Date (da - a) Assignment	2020 to present Tutor and Co-tutor of PhD students
Date (da - a) Assignment	December 2021 to present Member of the Commission for Study Plans of the Intergraduate Council in Information Engineering.

TECHNOLOGY TRANSFER

Date (da - a) Activity Website	2016 to present Founding partner of the innovative start-up "Weedea s.r.l. " https://www.weedea.com/
Date (da - a) Activity Website	2020 to present Member of the proposing group of the spin-off "Red Lynx Robotics s.r.l." https://www.redlynxrobotics.com

LANGUAGE SKILLS

MOTHER TONGUE | **ITALIAN**

OTHER LANGUAGES

ENGLISH	
Reading Skills	EXCELLENT
Writing skills	EXCELLENT
Oral expression skills	EXCELLENT
GERMAN	
Reading Skills	ELEMENTARY
Writing skills	ELEMENTARY
Oral expression skills	ELEMENTARY