EDUCATION AND TRAINING

2023–Present **Post Doc in Computer Science, Sapienza Università di Roma, Computer Science Department.**

Project Supervisor: Luigi Cinque Supervisor: Danilo Avola.

Department Cluster Management, Research on Biometrics, Signal Processing, Computer Vision, and Machine Learning.

2022–2023 **Post Doc in Computer Science, Università degli Studi di Udine, Computer Science Department.**

Project Supervisor: Gian Luca Foresti. Supervisor: Luigi Cinque, Danilo Avola.

Research on Biometrics, Signal Processing, Computer Vision, and Machine Learning.

Working jointly with VisionLab at Sapienza University of Rome.

2021–2022 **Post Doc in Computer Science, Sapienza Università di Roma, Computer Science Department.**

Project Supervisor: Luigi Cinque. Supervisor: Danilo Avola.

Research on Biometrics, Signal Processing, Computer Vision, and Machine Learning.

2019–2020 **Post Doc in Computer Science, Università degli Studi di Udine, Computer Science Department.**

Project Supervisor: Gian Luca Foresti. Supervisor: Luigi Cinque, Danilo Avola.

Research on Biometrics, Signal Processing, Computer Vision, and Machine Learning

Working jointly with VisionLab at Sapienza University of Rome

2015–2019 **Ph.D. in Computer Science, Sapienza Università di Roma**

Thesis Title: "Biometric Walk Recognizer - Research and results on wearable sensor-based gait recognition".

- High-level knowledge of Biometric Recognition especially focused on Gait Recognition
- High-Level knowledge of Signal Processing, Manipulation and Comparison Strategies.

Supervisor: Maria De Marsico.

28/02/2019

2017 **14th IAPR/IEEE/Eurasip International Ph.D. Summer School for Advanced Studies on Biometrics: Biometrics for Personalization and Forensic Identification**

- Attendance.
- Poster Presentation of the Research Activities.

2016 **Ph.D. Summer School on Pattern Recognition and Smart Vision for Land Security (VISMAC 2016)**

- Attendance.
- Poster Presentation of the Research Activities.

2013–2015 **Master degree in Computer Science, Sapienza Università di Roma**

- Biometric Recognition
- HCI and Multimodal Interaction
- Advanced Programming
- Multimedia

Thesis Supervisor: Maria De Marsico.

27/10/2015

2011–2013 **Bachelor's Degree in Computer Science, Sapienza Università di Roma**

- Programming Languages
- Databases
- Algorithms

Thesis Supervisor: Riccardo Silvestri

24/09/2013

2007–2011 **Diploma of "Perito Informatico"**

I.T.I.S. G. Marconi, Latina

PERSONAL SKILLS

Mother tongue: Italian

Other languages

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	C1	C2	C1	B2	C1

Levels: A1 and A2: Basic user – B1 and B2: Independent user – C1 and C2: Proficient user
Common European Framework of Reference for Languages

Communication skills
- Teamwork: I have worked in various types of teams from research teams to draught tournament/championship organization teams.
- Supervising skills: I have worked as a thesis co-supervisor of many students for Computer Science degree at Sapienza Università di Roma.

Computer skills
- High-level skills in Java programming
- High knowledge of Microsoft Office Tools
- Good knowledge of vector graphics programs (Corel Draw / Adobe Illustrator)
- Good knowledge of programming languages (C, C++, Python, Assembly) and fast learning of new ones.

Other skills
- Good organization and management skills
- High attitude in teaching. This also includes the production of teaching material.
- Love to travel and experience different cultures.

Driving licence: B

WORK EXPERIENCE

2009 – Present **Referee and Match Director of FID (Italian Federation of Draughts)**

Tournament and championship management at national level. Support referee in world championship tournaments.

WORK EXPERIENCE AS TEACHER

2023 - 1° Semester **Speaker/Talker and Examination for "Informatica e Tecnologie della Comunicazione Digitale" class. CORIS Department, Sapienza University of Rome, Bachelor's Degree on "Comunicazione Pubblica e d'Impresa".**

9 CFU, 72 hours, average audience: 250 students.

2022-2023 **Speaker/Talker and Examination for "Minor in Medicina Digitale" class. Medicine Department, Sapienza University of Rome. Extra Curricular Class**

50 hours, average audience: 30 students.

2022 - 2023 **Contract Professor for Law Department, Sapienza University of Rome, Bachelor's Degree on "Diritto e Amministrazione Pubblica".**
9 CFU, 72 hours, average audience: 80 students.
Production of teaching material, frontal lessons, examination.

2022 - 2° Semester **Speaker/Talker and Examination for "Informatica e Tecnologie della Comunicazione Digitale" class. CORIS Department, Sapienza University of Rome, Bachelor's Degree on "Comunicazione Pubblica e d'Impresa".**
9 CFU, 72 hours, average audience: 250 students.

2022 - 1° Semester **Speaker/Talker and Examination for "Informatica e Tecnologie della Comunicazione Digitale" class. CORIS Department, Sapienza University of Rome, Bachelor's Degree on "Comunicazione Pubblica e d'Impresa".**
9 CFU, 72 hours, average audience: 250 students.

2021 - 2° Semester **Speaker/Talker and Examination for "Informatica e Tecnologie della Comunicazione Digitale" class. CORIS Department, Sapienza University of Rome, Bachelor's Degree on "Comunicazione, Tecnologie e Culture Digitali".**
9 CFU, 72 hours, average audience: 250 students.

2021 - 1° Semester **Speaker/Talker and Examination for "Informatica e Tecnologie della Comunicazione Digitale" class. CORIS Department, Sapienza University of Rome, Bachelor's Degree on "Comunicazione Pubblica e d'Impresa".**
9 CFU, 72 hours, average audience: 250 students.

2021 – 2022 **Contract Professor for "Algoritmi 2" class. Computer Science Department, Sapienza University of Rome, Bachelor's Degree on "Computer Science".**
3 CFU, 30 hours, average audience: 100 students.
Production of teaching material, frontal lessons.

2020 - 2° Semester **Speaker/Talker and Examination for "Informatica e Tecnologie della Comunicazione Digitale" class. CORIS Department, Sapienza University of Rome, Bachelor's Degree in "Comunicazione, Tecnologie e Culture Digitali".**
9 CFU, 72 hours, average audience: 250 students.

2020 - in Semester **Speaker/Talker and Examination for "Informatica e Tecnologie della Comunicazione Digitale" class. CORIS Department, Sapienza University of Rome, Bachelor's Degree on "Comunicazione Pubblica e d'Impresa".**
9 CFU, 72 hours, average audience: 250 students.

Mar 2019 – Apr 2019 **Teaching Java class for the "Young Talent in Action" project, sponsored by Tree Company.**
30 hours, average audience: 20 students.
Production of teaching and testing material, frontal lessons, and laboratory classes for post-high school degree students.

Oct 2018 – Dec 2018 **Teaching Java class for Cyber Security Master. Joint project within ITHUM Academy, CY4GATE, and Luiss University.**

30 hours, average audience: 30 students from Saudi Arabia military force.
Production of teaching and testing material, frontal lessons, and laboratory classes.

June 2018 – Nov 2018

Teaching on "How to teach Information Science and Robotics in Primary and Secondary schools", for the 2nd edition of the project "In estate si imparano le STEM". Joint collaboration within Italian "Ministero delle Pari Opportunità" and Sapienza University of Rome.

20 hours, average audience: 25 primary and secondary school teachers.
Production of teaching and testing material and frontal lessons.

June 2017 – January 2018

Teaching on "Information Science and Robotics for Primary and Secondary school", for the project "In estate si imparano le STEM". Joint collaboration within Italian "Ministero delle Pari Opportunità" and Sapienza University of Rome.

30 hours, average audience: 30 primary and secondary school students
Production of teaching and testing material and frontal lessons.
NOTE: The project won the "AIF Premio Adriano Olivetti per l'eccellenza nella formazione 2018".

Mar 2017 – Sept 2017

Contract Professor for "Architetture 2" class. Computer Science Department, Sapienza University of Rome, Bachelor's Degree on "Computer Science".

3 CFU, 30 hours, average audience: 150 students.
Production of teaching material and frontal lessons.

Nov 2016 – Nov 2017

Co-Teaching on "Informatica" class. Department of Statistica Economia Finanza e Assicurazioni (SEFA), Sapienza University of Rome, Bachelor's Degree on "Statistica Economia Finanza e Assicurazioni". Laboratory (3cfu) and examination class

9 CFU, 72 hours, average audience: 100 students.
Production of teaching and testing material, frontal lessons, and examinations.

2008 – 2018

Individual/Group trainer for Scientific Subjects

High School Level training in Physics, Math, Computer Science, and Statistics.
University Level training in Computer Science

SCIENTIFIC PUBLICATIONS

Journal

- Avola, D., Cinque, L., Foresti, G.L., Lanzino, R., Marini, M.R., Mecca, A., & Scarcello, F. (2023). A Novel Transformer-Based IMU Self-Calibration Approach through On-Board RGB Camera for UAV Flight Stabilization. *Sensors*. 23 (5). 2655.
- Avola, D., Cannistraci, I., Cascio, M., Cinque, L., Diko, A., Fagioli, A., Foresti, G.L., Lanzino, R., Mancini, M., Mecca, A., & Pannone, D. (2022). A Novel GAN-Based Anomaly Detection and Localization Method for Aerial Video Surveillance at Low Altitude. *Remote Sensing*, 14 (16).
- Antonelli, S., Avola, D., Cinque, L., Crisostomi, D., Foresti, G. L., Galasso, F., Marini, M. R., Mecca, A. & Pannone, D. (2021). Few-shot Object Detection: a survey. *ACM Computing Surveys*, 54(11s), 37.
- Avola, D., Cinque, L., Di Mambro, A., Diko, A., Fagioli, A., Foresti, G. L., Marini, M.R., Mecca, A. & Pannone, D. (2022). Low-Altitude Aerial Video Surveillance via One-Class SVM Anomaly Detection from Textural Features in UAV Images. Information, 13(1), 2.
- Avola, D., Cinque, L., Fagioli, A., Foresti, G., & Mecca, A. (2021). Ultrasound Medical Imaging Techniques: A Survey. *ACM Computing Survey*, 54(3), 38.
- Avola, D., Cinque, L., Diko, A., Fagioli, A., Foresti, G.L., Mecca, A., Pannone, D. & Piciarelli, C. (2021). MS-Faster R-CNN: Multi-Stream Backbone for Improved Faster R-CNN Object Detection and Aerial Tracking from UAV Images. *Remote Sensing* 13, 1670.
- De Marsico, M. & Mecca, A. (2019). A Survey on Gait Recognition via Wearable Sensors. *ACM Computing Surveys, volume 52* (pp. 86:1–86:39)
- De Marsico, M., Mecca, A., Barra, S. (2019). Walking in a smart city: Investigating the gait stabilization effect for biometric recognition via wearable sensors. *Computers & Electrical Engineering, 80, 106501.*
- De Marsico, M. & Mecca, A. (2016). Biometric Walk Recognizer - Gait recognition by a single smartphone accelerometer. *In Multimedia Tools and Applications* (pp. 1-33). Springer.

Conference

- Avola, D., Cannistraci, I., Cascio, M., Cinque, L., Diko, A., Distante, D., Foresti, G. L., Mecca, A., & Scagnetto, I. (2023). Real-Time GAN-Based Model for Underwater Image Enhancement. *In International Conference on Image Analysis and Processing (ICIAP)* (pp. 412-423). Cham: Springer Nature.
- Avola, D., Cinque, L., Fagioli, A., Foresti, G. L., Marini, M. R., Mecca, A., & Pannone, D. (2022). Medicinal Boxes Recognition on a Deep Transfer Learning Augmented Reality Mobile Application. *In International Conference on Image Analysis and Processing (ICIAP)* (pp. 489-499). Springer, Cham.
- Mecca, A. (2018). Impact of gait stabilization: a study on how to exploit it for user recognition. *In International Conference on Signal Image Technology and Internet Based Systems (SITIS)*, IEEE. *
- De Marsico, M. & Mecca, A. (2018). Benefits of Gaussian Convolution in Gait Recognition. *In International Conference of the Biometrics Special Interest Group (BIOSIG)*. *
- Castiglione, A., Choo, K.-K. R., De Marsico, M. & Mecca, A. (2018). Walking on the Cloud - Gait Recognition, a Wearable Solution. *In International Conference on Network and System Security (NSS)*. *
- De Marsico M., Fartade E. & Mecca A. (2018). Feature-based Analysis of Gait Signals for Biometric Recognition - Automatic Extraction and Selection of Features from Accelerometer Signals. *In International Conference on Pattern Recognition Applications and Methods (ICPRAM) - Volume 1*, (pp. 630-637). *
- De Marsico, M., De Pasquale, D. & Mecca, A. (2016, September). Embedded Accelerometer Signal Normalization for Cross-Device Gait Recognition. *In International Conference of the Biometrics Special Interest Group (BIOSIG)* (pp. 1-5). *
- Kanev, K., De Marsico, M., Bottoni, P., & Mecca, A. (2016). Mobiles and Wearables: Owner Biometrics and Authentication. *In International Working Conference on Advanced Visual Interfaces (IWCAVI)* (pp. 318-319). ACM.
- De Marsico, M. & Mecca, A. (2015, September) Biometric Walk Recognizer. *In International Workshop on Recent Advances in Digital Security: Biometrics and Forensics (Biofor 2015)*, as part of the 18th International Conference on Image Analysis and Processing (ICIAP). *

* I personally presented the paper at the corresponding conference.

Book

- Book Chapter: “Gait Recognition: The Wearable Solution” in *HUMAN RECOGNITION IN UNCONSTRAINED ENVIRONMENTS*. Elsevier. Academic Press.

Other research activities

- Reviewer for top journals and conferences, namely:
  - Multimedia Tools and Application (MTAP), Springer
  - Machine Vision and Applications (MVAP), Springer
  - Remote Sensing, MDPI
  - Sensors, MDPI
  - Journal of Selected Topics in Signal Processing, IEEE
  - Transaction on Industrial Electronics (TIE), IEEE
  - Pattern Recognition, Elsevier
  - Pattern Recognition Letters, Elsevier
  - IAES International Journal of Artificial Intelligence (IJ-AI)
  - International Conference of Pattern Recognition (ICPR)
  - International Conference on Pattern Recognition Applications and Methods (ICPRAM)
  - International Conference on Image Processing and Vision Engineering (IMPROVE)
  - International Conference on Signal Image Technology & Internet Based Systems (SITIS)
  - International Conference on Computer Vision Theory and Applications (VISAPP)
- I was guest editor for a Special Issue "Unmanned Aerial Vehicles (UAV): New Solutions and Applications for Real-Life Tasks" for Remote Sensing.
- I was session chair for ICPRAM 2018 conference.
- I was a member of the editorial board for the SITIS 2018 conference.
- I was a member of the project winning the PRIN COSMOS 2015.

CITATION METRICS

Google Scholar
- H-Index: 8
- Citations: 288

Scopus
- H-Index: 8
- Citations: 210

Web of Science
- H-Index: 7
- Citations: 156

PROJECT

2022 MDBA - S.p.A.

Project: Autonomous Navigation for Intelligent UAVs

Senior R&D Engineer for technical support and **Work Package Leader** for Technical Report 1 - "Stato dell'Arte sulle Possibili Tecniche di Intelligenza Artificiale per la Navigazione basate su Immagini"

2022 MDBA - S.p.A.

Project: AI-based SAR Generator

Senior R&D Engineer for technical support and **Work Package Leader** for Technical Report 2 - "Stato dell'arte delle possibili tecniche di Intelligenza Artificiale per il trasferimento di stile tra due tipologie di immagini, con particolare attenzione ad immagini SAR."

2022 Ministero della Difesa Italiana

Project: Smart unmannEd AeRial vehiCles for Human likE monitoRing (SEARCHER)

Senior R&D Engineer for technical support and **Member** of Work Package 1 - "Proposta Progettuale – Analisi dei Requisiti – Stato dell'Arte – Architettura Logica e Fisica"

2020 Università degli Studi di Udine

Project: Counter UAV Strategies

Senior R&D Engineer for technical support and **Member** for Work Package 1 - Technical Report for "Counter UAV Strategies"

2016 Ministero della Difesa Italiana

Project: Augmented Reality for Mobile Applications (RA2M)

Staff Member for design and development of algorithms for detection and classification of unexploded devices

GRANT

2023–Present **Research Fellowship for project “Gestione di attrezzature di calcolo ad alte prestazioni nell’ambito della didattica di alta formazione”.**
Department of Computer Science, Sapienza Univerisità di Roma.
Project Supervisor: Alessandro Mei. Supervisor: Luigi Cinque, Danilo Avola

2022–2023 **Research Fellowship for project “Studio e sviluppo di un sistema di classificazione automatica di oggetti ed eventi basato su tecnologia Wi-Fi”.**
Department of Mathematics, Computer Science, and Physics, Univerisità degli Studi di Udine.
Project Supervisor: Gian Luca Foresti. Supervisor: Luigi Cinque, Danilo Avola

2021–2022 **Research Followship for the project "Utilizzo di Feature Biometriche relative alla camminata come supporto alle moderne tecniche di Re-Identificazione". Progetto di Eccellenza Sapienza**
Department of Computer Science, Sapienza Univerisità di Roma.
Project Supervisor: Luigi Cinque, Danilo Avola.

2019–2020 **Research Fellowship for project “Online Digital Data Analytics of Social Generate Content".**
Department of Mathematics, Computer Science, and Physics, Univerisità degli Studi di Udine.
Project Supervisor: Gian Luca Foresti. Supervisor: Luigi Cinque, Danilo Avola

2017–2018 **Research Scholarship for project “Biometric Walk Recognizer”, as part of PRIN COSMOS 2015.**
Department of Computer Science, Sapienza Università di Roma.
Project Supervisor: Maria De Marsico.

2017 **"Bando di Avvio alla Ricerca" (Small and Medium Research Projects)**
Project Title: "Biometric Walk Recognizer: Riconoscimento di soggetti registrati attraverso la camminata"
Project Supervisor: Maria De Marsico.

2016–2017 **Research Scholarship for project “PARTECIPATE. Piattaforma partecipativa per la valorizzazione collaborativa del patrimonio territoriale”.**
Department of Antiquity Science, Sapienza Università di Roma.
Project Supervisor: Francescaromana Stasolla. Supervisor: Maria De Marsico.

AWARD

2016 **3° Rank at Best Paper Ph.D. Contest at VISMAC2016 with the poster “Biometric Walk Recognizer”**

25-26/06/2016 **3° Rank at “Hackathon Italia Cerveteri”, for the project “3D Archeo Trip – Viaggiando nella Storia”**

2018 **"AIF Premio Adriano Olivetti per l’eccellenza nella formazione 2018" for the project "In estate si imparano le STEM".**

Personal Data I allow the use and processing of my personal data according to the Dlgs 196/2003 concerning the handling of personal data.

All the titles, publications, and states reported in this document are effective according to art. 46 and 47 of DPR 445/2000

(Alessio Mecca)

Curriculum vitae “Ai fini della pubblicazione in ottemperanza all’art. 15 del D. Lgs. 33/2013”

Autorizzo il trattamento dei miei dati personali ai sensi del D.Lgs 196 del 30 giugno 2003 e dell’art. 13 del Regolamento UE n. 676/2016 del 27.04.2016 “Regolamento generale sulla protezione dati” e del D.Lgs. n. 196/2003 “Codice in materia di protezione dei dati personali”, come modificato dal D.Lgs. n. 101 del 10.08.2018, recante disposizioni per l’adeguamento dell’ordinamento nazionale al Regolamento europeo ai fini della ricerca e selezione del personale.