EUROPEAN CURRICULUM VITAE FORMAT



PERSONAL INFORMATION

Name	**DENTAMARO, Vincenzo**
Address	Via Corfù 4, 70121 Bari, Italy
Telephone	+39 340 268 0417
E-mail	vincenzodentamaro@gmail.com
Web page	https://islab.di.uniba.it/team/vincenzo-dentamaro/
Identifiers	ORCID 0000-0003-1148-332X. Scopus Author ID 57053423100.
Nationality	Italian
Date and place of birth	15 May 1985, Modugno (BA), Italy
Current positions	Assistant Professor, tenure-track (RTD/B), University of Bari Aldo Moro (ING-INF/05). National Scientific Qualification as Associate Professor in 09/H1 and 01/B1.
Profile	Researcher in computer science working on efficient neural architectures, trustworthy and explainable AI, and the deployment of learning systems in safety-critical cyber-physical, clinical and enterprise settings. 78 publications, h-index 22 and 2,152 citations (Google Scholar, 28 October 2026), four patent families granted in the United States and Europe, more than € 3.3M of competitively funded projects coordinated, two companies co-founded. Sole author of a forthcoming Wiley monograph (2027) on signal processing for modern AI.

WORK EXPERIENCE

• Dates (from – to)	**February 2026 – present**
• Name and address of employer	University of Bari Aldo Moro, Department of Computer Science, Bari, Italy
• Type of business or sector	Higher education and research
• Occupation or position held	Assistant Professor, tenure-track (Ricercatore a Tempo Determinato di tipo B, RTD/B), academic discipline ING-INF/05 (Information Processing Systems)
• Main activities and responsibilities	• **Teaching.** Principal Lecturer (Docente Principale) of “Computer Architecture and Operating Systems” (Bari) and “Operating Systems” (Taranto campus) in the B.Sc. in Computer Science, from a.y. 2025-2026; previous courses in the B.Sc./M.Sc., Ph.D., Master and transversal-skills programmes are listed under Teaching activity. • **Research.** Research programme on efficient neural architectures (linear-time attention, WERSA, KV-cache compression), trustworthy and explainable AI (MuPAX), cybersecurity, cyber-physical systems and AI for health. IEEE FUZZ-IEEE 2026 Best Paper Award (WCCI 2026, Maastricht); TIDE 2026 talk (Università di Foggia, 15 September 2026); sole author of the Wiley monograph “Signal Processing for Modern Informatics” (2027, forthcoming). 78 publications, h-index 22, 2,152 citations on Google Scholar. • **Funded projects.** Principal Investigator for the University of Bari of Task 1.3, WP1, Spoke 1, NRRP DARE (from 08/03/2023) and of Work Package 2 of the VISAD project, NRRP “Tuscany Health Ecosystem” (September 2024 – September 2026, € 178,000). • **Supervision.** Supervisor of six M.Sc. theses in Computer Science (2022 – present); co-supervisor of Ms Alessia Monaco, National Ph.D. in Artificial Intelligence, Campus Bio-Medico University of Rome, XXXIX cycle (2023 – present). • **Institutional service.** Member of the Quality Assurance Committee (Commissione di Assicurazione della Qualità) of the Ph.D. in Computer Science, XLII cycle; member of selection committees for research fellowships in ING-INF/05 at the University of Bari Aldo Moro (research programmes 01.106, 01.114 and 01.115, 2024).

For further information:
www.cedefop.eu.int/transparency
www.europa.eu.int/comm/education/index_en.html
www.eurescv-search.com

- **Editorial and scientific community.** Editorial Board Member of Scientific Reports (Nature Portfolio); Associate Editor of Multidimensional Systems and Signal Processing (Springer Nature); Guest Editor of the MDPI Mathematics special issue “Advances in Deep Learning for Pattern Recognition”; Co-Editor of the Elsevier book on behavioural biometrics and AI for neurodegenerative diseases; reviewer for international journals; workshop (Co-)Chair at WCCI 2022, SDS 2023, ISATT 2023, BMVC 2023 and ICPRAM 2024; Program Committee member of WAITT 2023 and IGS 2023.
- **Collaborations.** University of Oxford, École de Technologie Supérieure and McGill University (Montréal), Stanford University, CNR-STIIMA, Campus Bio-Medico and Tor Vergata (Rome), Catholic University of Valencia, University of Sannio.

• Dates (from – to)	**February 2023 – present**
• Name and address of employer	Nextome S.r.l., Conversano (Bari), Italy
• Type of business or sector	Indoor positioning systems
• Occupation or position held	Non-Executive Chairman
• Main activities and responsibilities	• Chairman in a non-executive capacity since leaving the executive roles of Chairman and CTO (January 2023).

• Dates (from – to)	**February 2023 – February 2026**
• Name and address of employer	University of Bari Aldo Moro, Department of Computer Science, Bari, Italy
• Type of business or sector	Higher education and research
• Occupation or position held	Assistant Professor (Ricercatore a Tempo Determinato di tipo A, RTD/A), ING-INF/05
• Main activities and responsibilities	• Research within the project “Vertical Applied Solutions of Symbiotic AI”, NRRP (PNRR) FAIR programme. • University teaching (B.Sc., M.Sc., Master and transversal-skills courses) and Ph.D. courses, including “Symbiotic AI: Case Studies in Challenging Domains” (University of Bari) and “Behavioral Biometrics for Healthcare, Security and Related Fields” (Campus Bio-Medico University).

• Dates (from – to)	**July – September 2025**
• Name and address of employer	Department of Computer Science, University of Oxford, Oxford, United Kingdom
• Type of business or sector	Higher education and research
• Occupation or position held	Visiting Lecturer (competitive visiting appointment, host: Prof. Irina Voiculescu)
• Main activities and responsibilities	• Research on tumour recognition and segmentation, genetic profiling, and multimodal fusion with diagnostic reasoning generated through generative AI. • Developed with Prof. Voiculescu the MuPAX framework (Multidimensional Problem Agnostic eXplainable AI); the collaboration on explainable AI for medical imaging remains active.

• Dates (from – to)	**April – June 2022**
• Name and address of employer	Synchromedia Lab, École de Technologie Supérieure, Montréal, Quebec, Canada
• Type of business or sector	Higher education and research
• Occupation or position held	Visiting Research Student (host: Prof. Mohamed Cheriet; € 3,000 competitive mobility scholarship)
• Main activities and responsibilities	• Pattern recognition applied to healthcare, with attention to the analysis of multidimensional signals for patient monitoring. The collaboration remains active.

• Dates (from – to)	**December 2013 – January 2023**
• Name and address of employer	Nextome S.r.l., Conversano (Bari), Italy
• Type of business or sector	Indoor positioning systems (innovative start-up, now Innovative SME)
• Occupation or position held	Founding Partner, Chairman and Chief Technology Officer (CTO)
• Main activities and responsibilities	• Designed and patented an indoor positioning technology based on low-cost BLE sensors compatible with any smartphone, using unsupervised machine learning for non-linear signal filtering and movement recognition. Three patent families developed under his technical direction (US-10684349-B2, US-20230139903-A1, US-20230204707-A1). • Scientific Coordinator for Nextome of five competitively funded projects, total funding above € 3.3M: NXTracker (€ 840,950), Mosaicos (€ 1,270,372.86),

For further information:
www.cedefop.eu.int/transparency
www.europa.eu.int/comm/education/index_en.html
www.eurescv-search.com

BICIFICATION, EIT Urban Mobility (€ 660,669), Telemachus, European Space Agency (€ 513,000), Matrics (€ 100,000).
- Several Seals of Excellence from the European Commission awarded to the company.

• Dates (from – to)	**December 2018 – November 2019**
• Name and address of employer	University of Bari Aldo Moro, Department of Computer Science, Bari, Italy
• Type of business or sector	Research
• Occupation or position held	Research Fellow (co.co.co.), BESIDE project (POR Puglia ERDF-ESF 2014-2020)
• Main activities and responsibilities	• Multi-device data analysis and model development for neurodegenerative diseases; three publications produced. • Principal Investigator for the University of Bari of the whole Work Package 4 of BESIDE (01/2019 – 02/2020, total project funding € 1,092,981.75).
• Dates (from – to)	**June 2015 – September 2017**
• Name and address of employer	Bull Prediction S.r.l., Bari, Italy
• Type of business or sector	Financial technology (start-up)
• Occupation or position held	Co-Founder and CTO
• Main activities and responsibilities	• Co-led the development of a machine-learning software system for stock price forecasting. Winner of the “Bollenti Spiriti 2012” programme, Apulia Region.
• Dates (from – to)	**August 2011 – July 2013**
• Name and address of employer	Johnson Controls (NYSE: JCI), Milan, Italy
• Type of business or sector	Building technologies and controls
• Occupation or position held	Software Engineer
• Main activities and responsibilities	• Design and development of an advanced alarm system for airports and of a neural-network-based energy consumption forecasting system.
• Dates (from – to)	**March – June 2011**
• Name and address of employer	IBM Tivoli Lab, Rome, Italy
• Type of business or sector	Information technology
• Occupation or position held	Intern
• Main activities and responsibilities	• Design and development of a cloud computing infrastructure and of the integration between IoT devices and IBM Maximo; the work produced patent US-20200112603-A1.

EDUCATION AND TRAINING

• Dates (from – to)	**7 March 2025 (valid until 7 March 2037)**
• Name and type of organisation providing education and training	Italian National Scientific Qualification (Abilitazione Scientifica Nazionale, ASN)
• Principal subjects / occupational skills covered	Competition sector 01/B1, Computer Science
• Title of qualification awarded	National Scientific Qualification as Associate Professor
• Dates (from – to)	**19 November 2024 (valid until 19 November 2035)**
• Name and type of organisation providing education and training	Italian National Scientific Qualification (Abilitazione Scientifica Nazionale, ASN)
• Principal subjects / occupational skills covered	Competition sector 09/H1, Information Processing Systems
• Title of qualification awarded	National Scientific Qualification as Associate Professor
• Dates (from – to)	**October 2019 – November 2022 (degree awarded 14/11/2022)**
• Name and type of organisation providing education and training	University of Bari Aldo Moro, Department of Computer Science, Bari, Italy
• Principal subjects / occupational skills covered	Thesis: “Intelligent Systems for Predictive Analysis and Anomaly Detection in the Realm of Healthcare”
• Title of qualification awarded	Ph.D. in Computer Science and Mathematics (cum laude)
• Level in national classification (if appropriate)	ISCED 8 / EQF 8

For further information:
www.cedefop.eu.int/transparency
www.europa.eu.int/comm/education/index_en.html
www.eurescv-search.com

• Dates (from – to)	**January 2017 – May 2019 (degree awarded 04/05/2019)**
• Name and type of organisation providing education and training	Georgia Institute of Technology, Atlanta, GA, USA
• Principal subjects / occupational skills covered	Specialisation in Machine Learning. Thesis: “LICIC: Less Important Components for Imbalanced Multiclass Classification”
• Title of qualification awarded	Master of Science in Computer Science, GPA 3.7/4.0. Recognised by the Italian Government as an Italian Laurea Magistrale in Computer Science
• Level in national classification (if appropriate)	EQF 7
• Dates (from – to)	**January 2009 – October 2012 (degree awarded 18/10/2012)**
• Name and type of organisation providing education and training	University of Bari Aldo Moro, Bari, Italy
• Principal subjects / occupational skills covered	Thesis: “Integration of a Building Management System with IBM Maximo through Web Services”
• Title of qualification awarded	B.Sc. in Computer Science and Software Production Technologies, grade 107/110
• Level in national classification (if appropriate)	EQF 6
• Dates (from – to)	**Before January 2009**
• Name and type of organisation providing education and training	Istituto Tecnico M. Panetti, Bari, Italy
• Principal subjects / occupational skills covered	Industrial technical engineering
• Title of qualification awarded	Diploma in Industrial Technical Engineering, grade 100/100
• Level in national classification (if appropriate)	EQF 4

PERSONAL SKILLS AND COMPETENCES

Acquired in the course of life and career but not necessarily covered by formal certificates and diplomas.

MOTHER TONGUE	**Italian**
OTHER LANGUAGES	**English**
• Reading skills	Excellent (C1)
• Writing skills	Excellent (C1)
• Verbal skills	Excellent (C1)
	French
• Reading skills	Elementary (A2)
• Writing skills	Elementary (A2)
• Verbal skills	Elementary (A2)
SOCIAL SKILLS AND COMPETENCES	Long-standing international and multicultural collaborations: University of Oxford, École de Technologie Supérieure and McGill University (Montréal), Stanford University (invited seminar, 27 March 2023), Campus Bio-Medico and Tor Vergata (Rome), Catholic University of Valencia, University of Sannio. Teaching and communication to diverse audiences: B.Sc., M.Sc., Master, Ph.D. and transversal-skills courses; invited speaker at Stanford University, École de Technologie Supérieure and GICAI 2024.

ORGANISATIONAL SKILLS AND COMPETENCES

Scientific coordination of five competitively funded projects (above € 3.3M in total) and Principal Investigator of work packages in NRRP DARE, VISAD and BESIDE.

Co-founder of Bull Prediction, Nextome (Chairman 2013 – 2023) and Geodesia.ai (Chief Scientist).

Chair or Co-Chair of five international workshops: AI4Alzheimer (WCCI 2022), SDS 2023, ISATT 2023, BMVC 2023, NeroPRAI 2024 (ICPRAM 2024). Program Committee member of WAITT 2023 and IGS 2023. Member of selection committees for research fellowships at the University of Bari.

TECHNICAL SKILLS AND COMPETENCES

Efficient and trustworthy AI: linear-time and sub-quadratic attention (WERSA), KV-cache compression, compact architectures for edge deployment; model-agnostic explainability (MuPAX); interpretable attention for tabular data; evaluation of LLMs in high-stakes settings; runtime guardrails.

Cybersecurity: machine learning for intrusion detection and prevention, malware and API-call analysis, web application firewall hardening, YARA signature mutation (YAMME), SIEM log datasets, DevSecOps metrics.

Cyber-physical systems and sensing: BLE indoor positioning and radio-network deployment planning, inertial sensor fusion, human activity recognition, real-time computer vision.

AI for health: multimodal deep learning and behavioural biometrics for neurodegenerative diseases, audio-based screening, clinical decision support.

OTHER SKILLS AND COMPETENCES

Editorial and reviewing activity, awards, patents, company creation, institutional service and the complete list of publications are reported in full in the sections that follow.

RESEARCH PROFILE

Vincenzo Dentamaro works at the intersection of **efficient neural architectures**, **trustworthy and explainable AI**, and the **deployment of learning systems in safety-critical cyber-physical, clinical and enterprise settings**. The unifying question across his work is how to make modern AI systems cheap enough to run at the edge, transparent enough to be audited, and reliable enough to be trusted with consequential decisions. His record combines 78 publications (h-index 22, 2,152 citations on Google Scholar; h-index 18 on Scopus), four international patent families granted in both the United States and Europe, competitively funded projects with a combined budget of more than € 3.3M, led as scientific coordinator for his institution, and two deep-tech companies co-founded, one of which he took from prototype to deployment with international customers.

Architectures and systems-level efficiency. A central line of his work redesigns the computational primitives of deep learning under hard resource budgets. *WERSA* (Wavelet-Enhanced Random Spectral Attention) scales attention to very long sequences in linear time; *Geodesia-KV* introduces monotonic equipotential allocation for KV-cache compression in LLM inference; *LightAudioCNN* and *AUCO ResNet* are compact end-to-end networks designed to run on commodity and embedded hardware; and the *Interpretable Adaptive Multiscale Attention* network, published in *IEEE Transactions on Neural Networks and Learning Systems*, brings attention-based interpretability to tabular data. This work connects directly to computer architecture, embedded and edge inference, and the hardware-software co-design of AI accelerators.

Trustworthy, explainable and safe AI. During a **Visiting Lectureship at the University of Oxford** (Department of Computer Science, 2025) he developed, with Prof. Irina Voiculescu, *MuPAX* (Multidimensional Problem Agnostic eXplainable AI), applied to tumour segmentation and multimodal diagnostic reasoning. He has also developed *EVIDENCE* (evolutionary, deterministic, model-independent explanation), published in *Engineering Applications of Artificial Intelligence*. In parallel he has built rigorous evaluation methodologies for Large Language Models in high-stakes decision-making, published in the *International Journal of Medical Informatics*, combining human expertise with automated multi-parametric assessment of accuracy, safety and reliability. This line now extends to runtime AI safety: inference-time policy enforcement, hallucination detection and guardrails for generative AI and autonomous agents.

Cybersecurity and secure software engineering. A sustained portfolio addresses the defensive side of computing systems: *YAMME*, a metamorphic mutation engine for YARA byte signatures (*IEEE Transactions on Information Forensics and Security*); *PROGESI*, a proxy grammar hardening web application firewalls against SQL

For further information:
www.cedefop.eu.int/transparency
www.europa.eu.int/comm/education/index_en.html
www.eurescv-search.com

injection; automatic decision-tree-based NIDPS ruleset generation for DoS/DDoS attacks; two-stage firewall rule ordering optimisation (*Computers & Security*); *SIEVE*, an open log dataset collection for SIEM event classification (*Computer Networks*); and *FOBICS*, a metrics framework that quantifies project security posture from DevSecOps performance (*Information and Software Technology*). This work spans machine learning for security, cloud and network defence, and software engineering process measurement.

Cyber-physical systems, sensing and embedded intelligence. His earliest research produced four patented indoor positioning and radio-deployment technologies, now deployed by organisations including the European Space Agency, based on BLE sensing, non-linear signal filtering and smartphone inertial data. That line continues through a comprehensive survey of human activity recognition with smartphone-integrated sensors (*Expert Systems with Applications*), wearable sensing for clinical monitoring, real-time fall detection, vision-based gait analysis, and automatic recognition of dangerous driving styles for smart-city safety. These are cyber-physical systems problems: sensing, real-time inference, and closed-loop decision-making under latency and energy constraints.

AI for health and decision support. The application domain in which these methods are most severely tested is healthcare. His multimodal deep learning and explainable AI framework for the early detection of Parkinson's disease, published in *Nature Scientific Reports*, integrates heterogeneous PPMI data to surface early markers; complementary work covers kinematic gait analysis (*IEEE Access*), systematic review of ML gait analysis (*IEEE Journal of Biomedical and Health Informatics*), COVID-19 pre-screening from cough and breath (*Pattern Recognition*), and explainable early identification of palliative care needs in oncology. He is co-editor of the Elsevier volume *Behavioral Biometrics and Artificial Intelligence for Neurodegenerative Diseases Assessment* (2026), and sole author of the forthcoming Wiley monograph *Signal Processing for Modern Informatics: A Bridge Between Theory and Modern Artificial Intelligence* (2027, 400 pp.), which develops the connection between classical signal processing and contemporary machine learning that underpins much of his own work.

Translation, entrepreneurship and Silicon Valley ties. Research results have been carried to market twice. In 2013 he co-founded **Nextome S.r.l.**, serving as CTO until 2023 and as Non-Executive Chairman since, building a patented indoor positioning platform that earned multiple European Commission Seals of Excellence and ESA contracts. In 2026 he co-founded **Geodesia.ai** (www.geodesia.ai), an AI safety company based in **San Francisco**, where he serves as **Chief Scientist**. Geodesia works on the enforcement gap in deployed AI: the distance between what a language model or autonomous agent is permitted to do and what it actually does at inference time. Its product, *G-1*, is a real-time, model-agnostic enforcement proxy that applies policy enforcement, hallucination detection and channel-level guarding between an application and any model, without weight access or fine-tuning, and includes an MCP Security Gateway mediating agent access to external tools. The underlying research contribution, *GLAD-Manifold* (Geometric Learning of Action Dynamics on Riemannian Manifolds), represents permitted agent behaviour as a manifold and treats violation as geometric departure from it, making enforcement deterministic and auditable rather than heuristic; a European patent has been filed. His international footing is long-standing: a Visiting Lectureship at the **University of Oxford** in 2025, an M.Sc. in Computer Science with a Machine Learning specialisation from the **Georgia Institute of Technology**, a research stay at **École de Technologie Supérieure** in Montréal, and an invited seminar at **Stanford University** in 2023 on AI for neurodegenerative disease assessment, from which an ongoing collaboration originated.

Teaching and mentoring. He is currently course holder for **Computer Architecture and Operating Systems** and **Operating Systems** in the B.Sc. in Computer Science at the University of Bari, alongside graduate teaching in AI and doctoral courses in Italy and abroad. He has supervised or co-supervised more than 60 B.Sc. and M.Sc. theses and co-supervises a doctoral candidate. He has taught deliberately across disciplinary boundaries, delivering AI and machine learning courses to economics students, nursing and healthcare professionals, and non-computing cohorts, and has chaired or co-chaired five international workshops. This experience has been built with student populations that are diverse in academic preparation, background and first language, and it shapes a teaching approach focused on making systems-level and AI content accessible without diluting rigour.

MAIN RESEARCH INTERESTS

Efficient Neural Architectures and Systems for AI

Linear-time and sub-quadratic attention mechanisms; KV-cache compression and memory-efficient LLM inference; compact convolutional and transformer architectures for embedded and edge deployment; hardware-aware model design; adaptive multiscale attention for structured and tabular data.

Trustworthy, Explainable and Safe AI

Model-agnostic and deterministic explainability; interpretability of deep networks on tabular, temporal and multimodal data; evaluation methodologies for Large Language Models in high-stakes settings; runtime guardrails, inference-time policy enforcement and hallucination detection for generative AI and autonomous agents; AI governance and regulatory compliance by design.

Cybersecurity, Cloud and Secure Software Engineering

Machine learning for intrusion detection and prevention; malware and API-call analysis; web application firewall hardening; automated signature generation and mutation; SIEM event classification and security log datasets; firewall policy optimisation; DevSecOps metrics and software security assurance.

Cyber-Physical Systems, Sensing and Embedded Intelligence

Indoor positioning and radio-network deployment planning; BLE and inertial sensor fusion; human activity recognition from smartphone and wearable sensors; real-time computer vision for fall detection, gait analysis and driving-behaviour recognition; latency- and energy-constrained inference in the field.

Artificial Intelligence for Health and Decision Support

Multimodal deep learning for the early detection of neurodegenerative disease; behavioural biometrics from handwriting, gait and voice; audio-based screening; clinical decision support and its evaluation; explainable AI for care-need prediction and public-health analytics.

Computing Education and Data-Driven Innovation

Teaching artificial intelligence and systems topics to non-specialist and interdisciplinary audiences; AI for the digital transition in education; technology transfer analytics, patent-market correlation and knowledge supply-demand matching.

SCIENTIFIC RESPONSIBILITY FOR COMPETITIVELY FUNDED RESEARCH PROJECTS

- **Scientific Coordinator for Nextome S.r.l. of the NXTracker project**: National Operational Programme "Enterprises and Competitiveness" 2014-2020 ERDF, Art. 6 of the Decree of 20 November 2018, Axis 1, action 1.1.3, project no. F/190081/01-02/X44.

  Objective: design and engineering of a hybrid asset localisation software. Other partner: IDEA75 S.r.l.

  Period: 07/09/2020 – 06/03/2022. **Total funding:** € 840,950
- **Scientific Coordinator for Nextome S.r.l. of the Mosaicos project**: POR Puglia ERDF-ESF 2014-2020, Action 1.6, "Innonetwork" public call (AD no. 498/2016 and AD no. 16/2017), project code HOQ3PM3.

  Objective: development of interactive and co-sustainable mosaics. The partnership included seven further companies and the University of Bari Aldo Moro.

  Period: 2018 – 2019. **Total funding:** € 1,270,372.86
- **Scientific Coordinator for Nextome S.r.l. of the BICIFICATION project**, EIT Urban Mobility, aimed at promoting sustainable urban mobility.

  Partners: City of Braga, City of Istanbul, City of Tallinn, CERTH, KTH Royal Institute of Technology, Pinbike S.r.l. and Nextome S.r.l.

  Period: 01/2022 – 12/2022. **Total funding:** € 660,669
- **Scientific Coordinator for Nextome S.r.l. of the Telemachus project** (TELEmedicine Monitoring And Collaborative HUb-and-spoke System), funded by the **European Space Agency (ESA)**.

  Seven partners in total, including Politecnico di Bari.

  Period: 2020 – 2021. **Total funding:** € 513,000

- **Scientific Coordinator for Nextome S.r.l. of the Matrics project** ("Development of advanced metrics for the evaluation of technological performance"), funded by the Italian Ministry of Economy and Finance.

  Five partners: Nextome, University of Bologna, Rekeep, BIREX and UPMC.

  Period: 08/2021 – 05/2023. **Total funding:** € 100,000

SCIENTIFIC RESPONSIBILITY FOR WORK PACKAGES AND TASKS

- **Principal Investigator for the University of Bari of Task 1.3, WP1, Spoke 1, NRRP DARE** (DigitAl lifelong pREvention), code PNC0000002.

  Task T1.3: "Identification and networking of stakeholders for co-creation of strategies for personalized digital prevention".

  Period: 08/03/2023 – present
- **Principal Investigator for the University of Bari of Work Package 2 of the VISAD project**, funded by the NRRP under the "Tuscany Health Ecosystem" call.

  The project aims to improve the health management of elderly people and patients with chronic conditions through wearable technologies and smartphone telemedicine applications, supported by artificial intelligence for wandering recognition and lifestyle improvement measurement.

  Period: September 2024 – September 2026. **Funding:** € 178,000
- **Principal Investigator for the University of Bari of the whole Work Package 4 of the BESIDE project** (BEhavioral integrated System for diagnosis, support and monitoring of neuro-Degenerative diseases), project code YJTGRA7, POR Puglia ERDF-ESF 2014-2020, Priority Axis 1, Action 1.6, INNONETWORK call.

  Use of machine learning techniques for the detection, recognition and characterisation of behaviours and movements of patients affected by neurodegenerative disease.

  Period: 01/2019 – 02/2020. **Total funding:** € 1,092,981.75

NATIONAL AND INTERNATIONAL COLLABORATIONS

- **CNR-STIIMA, Bari, Italy.**

  Collaboration started in 2019 within the BESIDE project, on computer vision techniques for gait analysis in individuals with neurodegenerative diseases. Output: Cicirelli, G., Impedovo, D., Dentamaro, V., Marani, R., Pirlo, G., & D'Orazio, T. R. (2021). Human gait analysis in neurodegenerative diseases: a review. *IEEE Journal of Biomedical and Health Informatics*, 26(1), 229-242.
- **École de Technologie Supérieure, Montréal, Quebec, Canada.**

  In 2022 Vincenzo Dentamaro spent three months at the Synchromedia laboratory directed by Prof. Mohamed Cheriet. The collaboration, still active, concerns research on neurodegenerative diseases through advanced deep learning and artificial intelligence techniques. A first result is: Cheriet, M., Dentamaro, V., Hamdan, M., Impedovo, D., & Pirlo, G. (2023). Multi-speed transformer network for neurodegenerative disease assessment and activity recognition. *Computer Methods and Programs in Biomedicine*, 230, 107344. The collaboration continues with recent work on architecture-agnostic curriculum learning for document understanding.
- **McGill University, Montréal, Quebec, Canada.**

  During his stay in Montréal he met Dr Mah Parsa of McGill University, with whom he started a collaboration on multimodal methods for the diagnosis of neurodegenerative diseases and dementia. The collaboration, still ongoing, has so far led to the joint organisation of the AI4Alzheimer workshop and to a joint article.
- **Stanford University, California, USA.**

  In 2023 Vincenzo Dentamaro was invited by Prof. Scott Delp as a speaker at the seminar "Neurodegenerative Diseases Assessment and Artificial Intelligence", held on 27 March 2023 at Stanford University. The invitation followed Prof. Delp's interest in Dentamaro's research on the recognition of pathological gait patterns in patients affected by neurodegenerative diseases. The current collaboration concerns the development of an Android application supporting early diagnosis based on the analysis of sit-to-stand movements.
- **University of Oxford, Department of Computer Science, Oxford, UK.**

  Collaboration with Prof. Irina Voiculescu on tumour recognition and segmentation, genetic profiling and multimodal fusion with AI-generated diagnosis, including the MuPAX explainability framework.

For further information:
www.cedefop.eu.int/transparency
www.europa.eu.int/comm/education/index_en.html
www.eurescv-search.com

- **Campus Bio-Medico University of Rome and University of Rome Tor Vergata, Italy.**

  In 2024 a collaboration started with Prof. Michela Piredda (Campus Bio-Medico) and Dr Elena Sblendorio (Tor Vergata) on the use of artificial intelligence in clinical settings. He was invited to give a seminar on artificial intelligence within the Ph.D. programme in Nursing Sciences and Public Health at Tor Vergata. Output: Sblendorio, E., Dentamaro, V., Lo Cascio, A., Germini, F., Piredda, M., & Cicolini, G. (2024). *International Journal of Medical Informatics*, 188, 105501.
- **Catholic University of Valencia San Vicente Mártir, Valencia, Spain.**

  Started in 2024 with Prof. Germán Cerdà Olmedo, Dr Lisa Ursula Werner and Dr Elena Sandri, on the application of explainable AI (XAI) to the study of the dietary habits of the Spanish population, using advanced methods such as CatBoost and SHapley Additive exPlanations (SHAP) to identify diet predictors. Output: Sandri, E., Cerdà Olmedo, G., Piredda, M., Werner, L. U., & Dentamaro, V. (2025). *European Journal of Investigation in Health, Psychology and Education*, 15(2), 11.
- **University of Sannio, Benevento, Italy.**

  Collaboration with Prof. Lerina Aversano on fuzzy systems, explainable AI and vision-language models, applied to company survival prediction in the health sector and to plant stress classification in precision agriculture. This collaboration produced the **FUZZ-IEEE 2026 Best Paper Award**.

SCIENTIFIC ORGANISATION OF INTERNATIONAL WORKSHOPS

- **AI4Alzheimer Workshop**: Co-Chair of *Artificial Intelligence for Neurodegenerative Diseases*, held during the IEEE World Congress on Computational Intelligence (WCCI 2022), Padua, Italy, 18-23 July 2022. The workshop explored the application of artificial intelligence to the diagnosis and monitoring of neurodegenerative diseases.
- **Data Science Techniques Workshop**: Co-Chair of *Data Science Techniques for Datasets on Mental and Neurodegenerative Disorders*, at the Swiss Conference on Data Science (SDS 2023), Zurich, Switzerland, 22 July 2023.
- **AI in Education Workshop**: Chair of *AI in Education for the Digital Transition*, at the International Study Association on Teachers and Teaching conference (ISATT 2023), Bari, Italy, 2 July 2023.
- **BMVC 2023 Workshop**: Chair of *Artificial Intelligence and Computer Vision for Neurodegenerative Diseases Assessment: Advancing Computer Science in Dementia and Neurodegenerative Disorders*, at the British Machine Vision Conference (BMVC 2023), Aberdeen, UK, 24 November 2023. BMVC is a **CORE rank A** conference.
- **NeroPRAI 2024 Workshop**: Co-Chair of *Medical Condition Assessment Using Pattern Recognition: Progress in Neurodegenerative Disease and Beyond*, at the International Conference on Pattern Recognition Applications and Methods (ICPRAM 2024), Rome, Italy, 24 February 2024.

PROGRAM COMMITTEE MEMBERSHIP

- **WAITT 2023**: Program Committee member, *Workshop on Artificial Intelligence for Technology Transfer*, held during the World Conference on Information Systems and Technologies (WorldCIST'23), Pisa, Italy, 4-6 April 2023.
- **IGS 2023**: Program Committee member, 21st *International Graphonomics Society Conference*, Évora, Portugal, 16-19 October 2023.

INVITED TALKS

- **"Neurodegenerative Diseases Assessment and Artificial Intelligence"**: Invited speaker, three-hour seminar at the Department of Bioengineering (Biomechanics), *Stanford University*, Stanford, California, USA, 27 March 2023.
- **Global Insight Conference on Artificial Intelligence 2024 (GICAI 2024)**: Invited speaker with the talk "Leveraging Artificial Intelligence and Behavioral Biometrics for Early Diagnosis of Neurodegenerative Diseases", 11-12 July 2024.
- **TLC Summer School: Faculty Development**: Invited speaker on teaching innovation, Bari, Italy, 18 September 2023.

For further information:
www.cedefop.eu.int/transparency
www.europa.eu.int/comm/education/index_en.html
www.eurescv-search.com

- **"Artificial Intelligence for Healthcare"**: Invited speaker, three-hour seminar at Synchromedia Lab, *École de Technologie Supérieure*, Montréal, Quebec, Canada, 11 May 2022.
- **IEEE PIMRC 2018**: Invited panellist, as Chairman and CTO of Nextome, at the indoor localisation panel of the industrial session of the *IEEE 29th Annual International Symposium on Personal, Indoor and Mobile Radio Communications*, Bologna, Italy, 10 September 2018.

PARTICIPATION IN SCIENTIFIC EVENTS AS SPEAKER

- **TIDE 2026**: "Patent-Market Correlations via Fuzzy Technology Transfer Analysis", Università di Foggia, Foggia, Italy, 15 September 2026.
- **FUZZ-IEEE 2026**: "Fuzzy Vertex-Feature Clustering Framework for Predicting Survival of Health Sector Companies and Generative Explanations", IEEE World Congress on Computational Intelligence, Maastricht, The Netherlands, 21-26 June 2026. **Best Paper Award.**
- **ICPRAI 2022**: "Comparing Artificial Intelligence Algorithms in Computer Vision: The Weapon Detection Benchmark", International Conference on Pattern Recognition and Artificial Intelligence, Paris, France, 1-3 June 2022.
- **ICDAR WML 2021**: "Benchmarking of Shallow Learning and Deep Learning Techniques with Transfer Learning for Neurodegenerative Disease Assessment Through Handwriting", Lausanne, Switzerland, 7 September 2021.
- **ICPR 2020**: "Fall Detection by Human Pose Estimation and Kinematic Theory", International Conference on Pattern Recognition, Milan, Italy, 10-15 January 2021.
- **AIHA 2020**: "An Analysis of Tasks and Features for Neuro-Degenerative Disease Assessment by Handwriting", Artificial Intelligence in Healthcare Applications, Milan, Italy, 10-15 January 2021.
- **ICPRAI 2020**: "Sit-to-Stand Test for Neurodegenerative Diseases Video Classification", Zhongshan, China, 19-23 October 2020.

EDITORIAL ACTIVITIES

- **Editorial Board Member**: *Scientific Reports* (Nature Portfolio). Multidisciplinary open-access journal of the Nature Portfolio; member of the editorial board handling submissions in artificial intelligence and machine learning.
- **Associate Editor**: *Multidimensional Systems and Signal Processing* (Springer Nature), Impact Factor 2.5, Quartile Q2. International journal focused on the theory and applications of multidimensional systems and signal processing.
- **Co-Editor**: *"Behavioral Biometrics and Artificial Intelligence for Neurodegenerative Diseases Assessment"*, Elsevier Inc., ISBN 9780443135453. The book explores the use of behavioural biometrics and artificial intelligence in the assessment of neurodegenerative diseases.
- **Guest Editor**: Special Issue *"Advances in Deep Learning for Pattern Recognition"*, *MDPI Mathematics*.

REVIEWING ACTIVITY FOR INTERNATIONAL JOURNALS

IEEE Transactions on Pattern Analysis and Machine Intelligence • IEEE Transactions on Medical Imaging • IEEE Transactions on Automation Science and Engineering • IEEE Transactions on Learning Technologies • IEEE Transactions on Services Computing • Pattern Recognition • IEEE Journal of Biomedical and Health Informatics • Engineering Applications of Artificial Intelligence • Sensors • Multimedia Tools and Applications • International Journal of Medical Informatics • Journal of Ambient Intelligence and Humanized Computing • IEEE Access • Applied Sciences • Electronics • International Journal of Information Technology & Decision Making • Evolving Systems • Array

For further information:
www.cedefop.eu.int/transparency
www.europa.eu.int/comm/education/index_en.html
www.eurescv-search.com

AWARDS AND HONOURS

- **IEEE FUZZ-IEEE 2026 Best Paper Award**: Awarded at the IEEE International Conference on Fuzzy Systems, part of the IEEE World Congress on Computational Intelligence (WCCI 2026), Maastricht, The Netherlands, 21-26 June 2026, for the paper "Fuzzy Vertex-Feature Clustering Framework for Predicting Survival of Health Sector Companies and Generative Explanations" (L. Aversano, V. Dentamaro, F. Franchini).
- **Huawei University Challenge Italy 2021**: Winner in the Embedded AI category with the project "AUCO ResNet for Covid-19".
- **Nextome "Most Awesome Alpha Startup"**: Recognition as the most promising alpha-stage start-up, Dublin, November 2014.
- **Indoor Positioning Expert Recognition**: Place Conference, New York, USA, 9 June 2015.
- **First Prize, Busan Smart City Innovator**: Smart city innovation award, International Telecommunication Union congress, Busan, South Korea, 2016.
- **Global Innovator Expert**: Recognition at the IBM Glovators event, Barcelona, Spain, 2016.
- **Premio Industria Felix**: Merit mention for entrepreneurial excellence, May 2016.
- **European Commission Seals of Excellence**: Multiple awards to Nextome S.r.l. for the quality and innovativeness of its research proposals.

TEACHING ACTIVITY

Vincenzo Dentamaro has taught university courses at the University of Bari since becoming a researcher (RTD/A) in 2023, has taught in Ph.D. programmes, and provided teaching support during his own doctoral studies.

Degree Programme Courses

- **Principal Lecturer (Docente Principale): "Computer Architecture and Operating Systems"** (*Architettura degli Elaboratori e Sistemi Operativi*), **B.Sc. in Computer Science**, *University of Bari Aldo Moro, Department of Computer Science*, Bari, Italy.

  Course holder for the core undergraduate course covering computer architecture and operating systems. **Period:** a.y. 2025-2026 – present
- **Principal Lecturer (Docente Principale): "Operating Systems"** (*Sistemi Operativi*), **B.Sc. in Computer Science and Information Technologies**, *University of Bari Aldo Moro*, Taranto campus, Italy.

  Course holder for the core undergraduate operating systems course. **Period:** a.y. 2025-2026 – present
- **M.Sc. in Economics**, *University of Bari Aldo Moro, Department of Economics*, Bari, Italy. "Digital Innovation for Sustainability", 6 ECTS. **Period:** February – June 2025

Ph.D. Programme Courses

- **Ph.D. in Computer Science and Mathematics**, *University of Bari Aldo Moro, Department of Computer Science*, Bari, Italy. "Advanced Topics in AI: Machine Learning, Symbiotic AI, and Behavioral Biometrics", 30 hours. **Period:** October – December 2024
- **National Ph.D. in Artificial Intelligence**, *Campus Bio-Medico University*, Rome, Italy. "Behavioral Biometrics for Healthcare, Security and Related Fields" (second edition), 15 hours. **Period:** April – May 2024
- **Ph.D. in Computer Science and Mathematics**, *University of Bari Aldo Moro*, Bari, Italy. "Symbiotic AI: Case Studies in Challenging Domains", 32 hours. **Period:** November – December 2023
- **National Ph.D. in Artificial Intelligence**, *Campus Bio-Medico University*, Rome, Italy. "Behavioral Biometrics for Healthcare, Security and Related Fields", 15 hours. **Period:** April – May 2023

Transversal Skills and Master Courses

- **Transversal Skills Course**, *University of Bari Aldo Moro*, Bari, Italy. "Foundations of Artificial Intelligence and Machine Learning: Developing the Potential of Healthcare Professionals, 2nd edition", 4 ECTS, 30 hours. **Period:** January – February 2025

For further information:
www.cedefop.eu.int/transparency
www.europa.eu.int/comm/education/index_en.html
www.eurescv-search.com

- **Transversal Skills Course**, *University of Bari Aldo Moro*, Bari, Italy. "Foundations of Artificial Intelligence and Machine Learning: Developing the Potential of Healthcare Professionals", 4 ECTS, 32 hours, 121 students. **Period:** January – February 2024
- **Transversal Skills Course**, *University of Bari Aldo Moro*, Bari, Italy. "AI Beyond the Code: Transversal Skills with Artificial Intelligence", 8 hours. **Period:** January – March 2024
- **Second-level Master in Economics and Management of Healthcare Organisations**, *University of Bari Aldo Moro, Department of Economics and Business Management*. Module "The Use of Big Data in Healthcare", 4 hours. **Period:** May 2024
- **Transversal Skills Course**, *University of Bari Aldo Moro*, Bari, Italy. "Computational Thinking: Arduino and Scratch4Arduino", module "Arduino and Scratch4Arduino", 12 hours. **Period:** April – June 2022

Teaching Support

- **"Urban Security"**, *University of Bari Aldo Moro, Department of Computer Science, B.Sc./M.Sc. in Computer Science*, 60 hours. **Period:** a.y. 2024-2025 and a.y. 2023-2024
- **"Pattern Recognition"**, *University of Bari Aldo Moro, Department of Computer Science*, 60 hours. **Period:** a.y. 2020-2021
- **"Programming"**, *University of Bari Aldo Moro, Department of Computer Science*, 45 hours. **Period:** a.y. 2019-2020 and a.y. 2020-2021
- **"Programming Laboratory"**, *University of Bari Aldo Moro, Department of Computer Science*, 35 hours. **Period:** a.y. 2019-2021

THESIS SUPERVISION

Ph.D. Co-Supervision

- **2023 – present**: Co-supervisor of Ms Alessia Monaco, *National Ph.D. Programme in Artificial Intelligence*, Campus Bio-Medico University of Rome, XXXIX cycle, "Health and Life Sciences" area. The research project focuses on the application of artificial intelligence in healthcare, with particular attention to the early diagnosis of neurodegenerative diseases.

M.Sc. and B.Sc. Thesis Supervision

- **2022 – present**: Supervisor of **six M.Sc. theses** in Computer Science (including Luca Musti, Felice Franchini and Andrea Pallotta), Department of Computer Science, University of Bari, from academic year 2022-2023 onwards, on the application of machine learning techniques to the analysis of complex data.
- **2019 – 2022**: Co-supervisor, jointly with Prof. Giuseppe Pirlo or Prof. Donato Impedovo, of **53 B.Sc. students** in Computer Science at the University of Bari Aldo Moro, on topics including pattern recognition, artificial intelligence applied to health, and signal processing.
- **2019 – 2022**: Co-supervisor, jointly with Prof. Giuseppe Pirlo or Prof. Donato Impedovo, of **8 M.Sc. students** in Computer Science at the University of Bari Aldo Moro, on advanced topics in artificial intelligence and its applications.

TECHNOLOGY TRANSFER: PATENTS AND COMPANY CREATION

International Patents

- **U.S. Patent US20200112603A1: "Transfer of files with arrays of strings in SOAP messages"**

  Filed: 14/09/2012. **Granted:** 09/04/2020. Continuations: US 9,276,998 (2016), US 9,866,620 (2018), US 10,601,897 (2020), US 11,153,365 (2021).

  Assignees/Inventors: Vincenzo Dentamaro, Francesco Sardella, Mario Somma.

  Description: A method to improve the efficiency of data transfer in SOAP-based web communication environments.
- **European Patent EP3052957B1: "Enhanced indoor localization method"** (also U.S. Patent US-10684349-B2)

  Filed: 02/10/2013. **Granted:** 09/04/2015 (EP); 16/06/2020 (US).

Inventors: Domenico Colucci, Vincenzo Dentamaro, Paolo Giglio, Giangiuseppe Tateo.

Description: An advanced indoor localisation method improving positioning accuracy inside buildings through advanced signal filtering and movement recognition techniques. Currently in use by several organisations, including the European Space Agency.

- **European Patent EP4161125A1: "Computer-implemented method for automated planning deployment of radio communication devices in an environment"** (also US20230139903A1, granted as **U.S. Patent 12,245,049**, 04/03/2025)

  Filed: 30/09/2021. **Published:** 29/09/2022.

  Inventors: Pietro Boccadoro, Domenico Colucci, Vincenzo Dentamaro, Laura Notarangelo, Giangiuseppe Tateo.

  Description: A system for optimising the placement of radio communication devices in order to improve coverage and indoor localisation accuracy.

- **European Patent EP4206717A1: "Methods for locating a mobile radiocommunication device or passive object in a confined environment"** (also US20230204707A1, granted as **U.S. Patent 12,468,004**, 11/11/2025)

  Filed: 28/12/2021. **Published:** 05/07/2023.

  Inventors: Vincenzo Dentamaro, Domenico Colucci, Giangiuseppe Tateo, Pietro Boccadoro, Laura Notarangelo.

  Description: An innovative system improving indoor localisation accuracy using BLE sensors and machine learning techniques.

Company Creation

- **Co-Founder and Chief Scientist**, *Geodesia.ai* (www.geodesia.ai), San Francisco, CA, USA. **Period:** 2026 – present.

  Geodesia.ai is a San Francisco-based AI safety company. It addresses the enforcement gap in deployed AI systems: organisations can specify what a language model or autonomous agent is allowed to do, but have no reliable mechanism to guarantee that behaviour at inference time. Existing approaches rely on prompt engineering, fine-tuning or heuristic output filtering, all of which are probabilistic and cannot be audited.

  The product, **G-1**, is a real-time, model-agnostic enforcement proxy that sits between the application and any LLM or agent. It applies policy enforcement, hallucination detection and channel-level guarding without requiring access to model weights, retraining, or modification of the application. Deployed capabilities include a voice-channel guard for spoken interactions and an **MCP Security Gateway** that mediates agent access to external tools and data sources. Target customers are AI-native startups and scale-ups operating in regulated or high-liability contexts.

  The scientific core is **GLAD-Manifold** (Geometric Learning of Action Dynamics on Riemannian Manifolds), which represents the space of permitted agent behaviour as a Riemannian manifold and detects violation as geometric departure from it, yielding deterministic and auditable enforcement decisions rather than probabilistic filtering. A European patent has been filed. **SLEDGE**, a companion algorithm, targets hallucination detection in generative outputs. Related published work includes *Geodesia-KV*, a monotonic equipotential allocation scheme for KV-cache compression in LLM inference. The GLAD-Manifold formulation is also being investigated for computational biology applications, including protein design and cancer drug response prediction.

- **Founding Partner, Chairman and CTO**, *Nextome S.r.l.*, Bari, Italy. **Period:** December 2013 – January 2023 (Non-Executive Chairman since February 2023).

  Nextome S.r.l. is a former innovative start-up, now an Innovative SME, specialised in indoor positioning systems. The technology developed and patented by Nextome allows the exact position inside enclosed spaces to be determined using low-cost BLE sensors compatible with any smartphone. Advanced unsupervised machine learning techniques are used for the non-linear filtering of signals and for the recognition of user movement through smartphone accelerometers.

  Between 2014 and 2023 several competitive European projects were funded, for which the candidate acted as scientific lead. Nextome S.r.l. received several Seals of Excellence from the European Commission, attesting to the quality and innovativeness of the technology developed.

INSTITUTIONAL, ORGANISATIONAL AND SERVICE ACTIVITIES

- **Member of the Quality Assurance Committee (Commissione di Assicurazione della Qualità)** of the Ph.D. in Computer Science, XLII cycle, University of Bari Aldo Moro.

Member of several selection committees for the award of research fellowships in the ING-INF/05 scientific-disciplinary sector at the University of Bari Aldo Moro, including:

- Research programme no. 01.106, Rectoral Decree no. 1916 of 23/05/2024
- Research programme no. 01.115, Rectoral Decree no. 2974 of 06/08/2024
- Research programme no. 01.114, Rectoral Decree no. 2972 of 06/08/2024

PUBLICATIONS

Journal impact factors and Scimago quartiles are reported where available.

Journal Articles

2026

[1] E. Sblendorio, **V. Dentamaro**, M. De Maria, S. Tempesta, E. Barile, D. Napolitano, M. Tallini, D. Nigrelli, G. Cicolini and M. Piredda. "Cloud-Based and Locally Deployed Language Models in Nursing and Health Care: An AI Act–Aligned Framework". In: *JMIR Medical Informatics* 14 (2026), p. e90854.

[2] M. Hamdan, **V. Dentamaro**, G. Pirlo and M. Cheriet. "SAGE: A Stabilize-Assess-Govern-Enforce Framework for Deployment-Oriented Evaluation of LLM-Based Autonomous Agents". In: *IEEE Transactions on Artificial Intelligence* (2026).

[3] V. D. Amodio, L. Aversano, **V. Dentamaro** and F. Franchini. "Deep Learning in Farming: A Systematic Evidence-Weighted Review of Applications, Validation Gaps, and Emerging Frontiers". In: *Big Data and Cognitive Computing* 10.8 (2026), p. 273.

[4] **V. Dentamaro**, L. Di Maggio, S. Galantucci, D. Impedovo and G. Pirlo. "Safety in Smart Cities: Automatic Recognition of Dangerous Driving Styles". In: *Information* 17.1 (2026), p. 44.

[5] E. Casabona, E. Malinverni, C. Cugno, L. Bottero, E. Sblendorio, **V. Dentamaro**, M. De Maria, C. Mastroianni and B. Albanesi. "COMPASS-ONC: Explainable Artificial Intelligence for the Early Identification of Palliative Care Needs in Oncology". In: *International Journal of Health Supplements* 1.Suppl. 2 (2026), pp. 186-187.

2025

[6] P. Artioli, **V. Dentamaro**, S. Galantucci, A. Magri, G. Pellegrini and G. Semeraro. "SIEVE: Generating a Cybersecurity Log Dataset Collection for SIEM Event Classification". In: *Computer Networks* 266 (2025), p. 111330. **(Q1 Scimago)**

[7] A. Caniglia, **V. Dentamaro**, S. Galantucci and D. Impedovo. "FOBICS: Assessing Project Security Level Through a Metrics Framework That Evaluates DevSecOps Performance". In: *Information and Software Technology* 178 (2025), p. 107605. **(Q1 Scimago, IF 3.8)**

[8] **V. Dentamaro**, P. Giglio, D. Impedovo and G. Pirlo. "EVolutionary Independent DEtermiNistiC Explanation". In: *Engineering Applications of Artificial Intelligence* 156 (2025), p. 111008. **(Q1 Scimago)**

[9] **V. Dentamaro**, V. Gattulli and D. Impedovo. "LightAudioCNN: A Novel Deep Neural Network for Audio-Based Parkinson's Disease Recognition and Subtype Differentiation". In: *Pattern Analysis and Applications* 28.4 (2025), p. 185.

[10] E. Sblendorio, M. Tomietto, **V. Dentamaro**, A. Lo Cascio, G. Imbriaco, M. Piredda and G. Cicolini. "A Cross-Country Comparison of Nursing Research Outputs in Relation to Funding: An Artificial Intelligence-Enhanced Multivariate Analysis". In: *Nursing Outlook* 73.6 (2025), p. 102583. **(Q1 Scimago)**

[11] E. Sandri, G. Cerdà Olmedo, M. Piredda, L. U. Werner and **V. Dentamaro**. "Explanatory AI Predicts the Diet Adopted Based on Nutritional and Lifestyle Habits in the Spanish Population". In: *European Journal of Investigation in Health, Psychology and Education* 15.2 (2025), p. 11.

2024

[12] A. Coscia, **V. Dentamaro**, S. Galantucci, A. Maci and G. Pirlo. "Automatic Decision Tree-Based NIDPS Ruleset Generation for DoS/DDoS Attacks". In: *Journal of Information Security and Applications* 82 (2024), p. 103736. **(Q1 Scimago 2023, IF 3.8)**

[13] A. Coscia, **V. Dentamaro**, S. Galantucci, A. Maci and G. Pirlo. "PROGESI: A PROxy Grammar to Enhance Web Application Firewall for SQL Injection Prevention". In: *IEEE Access* 12 (2024), pp. 107689-107703. **(Q1 Scimago 2023, IF 3.4)**

[14] **V. Dentamaro**, V. Gattulli, D. Impedovo and F. Manca. "Human Activity Recognition with Smartphone-Integrated Sensors: A Survey". In: *Expert Systems with Applications* 246 (2024), p. 123143. **(Q1 Scimago 2023, IF 7.5)**

[15] **V. Dentamaro**, P. Giglio, D. Impedovo, G. Pirlo and M. Di Ciano. "An Interpretable Adaptive Multiscale Attention Deep Neural Network for Tabular Data". In: *IEEE Transactions on Neural Networks and Learning Systems* 36.4 (2024), pp. 6995-7009. **(Q1 Scimago 2023, IF 10.2)**

[16] **V. Dentamaro**, D. Impedovo, L. Musti, G. Pirlo and P. Taurisano. "Enhancing Early Parkinson's Disease Detection Through Multimodal Deep Learning and Explainable AI: Insights from the PPMI Database". In: *Scientific Reports* 14.1 (2024), p. 20941. **(Q1 Scimago 2023, IF 3.8)**

[17] E. Sblendorio, **V. Dentamaro**, A. Lo Cascio, F. Germini, M. Piredda and G. Cicolini. "Integrating Human Expertise and Automated Methods for a Dynamic and Multi-Parametric Evaluation of Large Language Models' Feasibility in Clinical Decision-Making". In: *International Journal of Medical Informatics* 188 (2024), p. 105501. **(Q1 Scimago 2023, IF 3.9)**

[18] P. Taurisano, C. Abbatantuono, D. Gasparre, M. M. Biasi, G. Paparella, **V. Dentamaro**, D. Veneto, D. Impedovo and M. F. De Caro. "CREATE: Enhancing Cognitive Reserve Through Assistive Technology in Elderly Care: Introduction to a Primary Prevention Program". In: *Alzheimer's & Dementia* 20 (2024), p. e092725. **(Q1 Scimago 2023, IF 13.1)**

2023

[19] G. Abbattista, M. Chimienti, **V. Dentamaro**, P. Giglio, D. Impedovo, G. Pirlo and G. Rosato. "A Biometric-Based System for Unsupervised Anomaly Behaviour Detection at the Pawn Shop". In: *Cyber-Physical Systems* 9.4 (2023), pp. 338-356.

[20] M. Cheriet, **V. Dentamaro**, M. Hamdan, D. Impedovo and G. Pirlo. "Multi-Speed Transformer Network for Neurodegenerative Disease Assessment and Activity Recognition". In: *Computer Methods and Programs in Biomedicine* 230 (2023), p. 107344. **(Q1 Scimago 2023, IF 4.9)**

[21] A. Coscia, **V. Dentamaro**, S. Galantucci, A. Maci and G. Pirlo. "An Innovative Two-Stage Algorithm to Optimize Firewall Rule Ordering". In: *Computers & Security* 134 (2023), p. 103423. **(Q1 Scimago 2023, IF 4.8)**

[22] A. Coscia, **V. Dentamaro**, S. Galantucci, A. Maci and G. Pirlo. "YAMME: A YAra-Byte-Signatures Metamorphic Mutation Engine". In: *IEEE Transactions on Information Forensics and Security* 18 (2023), pp. 4530-4545. **(Q1 Scimago 2023, IF 6.3)**

2022

[23] A. Cannarile, **V. Dentamaro**, S. Galantucci, A. Iannacone, D. Impedovo and G. Pirlo. "Comparing Deep Learning and Shallow Learning Techniques for API Calls Malware Prediction: A Study". In: *Applied Sciences* 12.3 (2022), p. 1645.

[24] F. Carrera, **V. Dentamaro**, S. Galantucci, A. Iannacone, D. Impedovo and G. Pirlo. "Combining Unsupervised Approaches for Near Real-Time Network Traffic Anomaly Detection". In: *Applied Sciences* 12.3 (2022), p. 1759.

[25] **V. Dentamaro**, P. Giglio, D. Impedovo, L. Moretti and G. Pirlo. "AUCO ResNet: An End-to-End Network for Covid-19 Pre-Screening from Cough and Breath". In: *Pattern Recognition* 127 (2022), p. 108656. **(Q1 Scimago 2022, IF 7.5)**

2021

[26] G. Cicirelli, D. Impedovo, **V. Dentamaro**, R. Marani, G. Pirlo and T. R. D'Orazio. "Human Gait Analysis in Neurodegenerative Diseases: A Review". In: *IEEE Journal of Biomedical and Health Informatics* 26.1 (2021), pp. 229-242. **(Q1 Scimago 2021, IF 6.7)**

[27] N. Convertini, **V. Dentamaro**, D. Impedovo and G. Pirlo. "Sit-to-Stand Test for Neurodegenerative Diseases Video Classification". In: *International Journal of Pattern Recognition and Artificial Intelligence* 35.12 (2021), p. 2160003.

[28] D. Impedovo, **V. Dentamaro**, G. Abbattista, V. Gattulli and G. Pirlo. "A Comparative Study of Shallow Learning and Deep Transfer Learning Techniques for Accurate Fingerprints Vitality Detection". In: *Pattern Recognition Letters* 151 (2021), pp. 11-18. **(Q1 Scimago 2021, IF 3.9)**

2020

[29] N. Convertini, **V. Dentamaro**, D. Impedovo, G. Pirlo and L. Sarcinella. "A Controlled Benchmark of Video Violence Detection Techniques". In: *Information* 11.6 (2020), p. 321.

[30] V. Dentamaro, D. Impedovo and G. Pirlo. "Gait Analysis for Early Neurodegenerative Diseases Classification Through the Kinematic Theory of Rapid Human Movements". In: *IEEE Access* 8 (2020), pp. 193966-193980. **(Q1 Scimago 2020, IF 3.4)**

2019

[31] D. Impedovo, F. Balducci, **V. Dentamaro** and G. Pirlo. "Vehicular Traffic Congestion Classification by Visual Features and Deep Learning Approaches: A Comparison". In: *Sensors* 19.23 (2019), p. 5213.

[32] D. Impedovo, **V. Dentamaro**, G. Pirlo and L. Sarcinella. "TrafficWave: Generative Deep Learning Architecture for Vehicular Traffic Flow Prediction". In: *Applied Sciences* 9.24 (2019), p. 5504.

2018

[33] V. Dentamaro, D. Impedovo and G. Pirlo. "LICIC: Less Important Components for Imbalanced Multiclass Classification". In: *Information* 9.12 (2018), p. 317.

2017

[34] V. Dentamaro, D. Impedovo, G. Pirlo and G. Semeraro. "Cost-Accuracy Optimization for Electronic Procurement". SSRN 4395563 (2017).

Books and Book Chapters

Forthcoming

[35] V. Dentamaro. ***Signal Processing for Modern Informatics: A Bridge Between Theory and Modern Artificial Intelligence***. John Wiley & Sons, 2027, 400 pp. ISBN 9781394434206. **(Sole-authored monograph, forthcoming)**

2026

[36] V. Dentamaro, D. Impedovo and G. Pirlo (Eds.). ***Behavioral Biometrics and Artificial Intelligence for Neurodegenerative Diseases Assessment***. Elsevier / Academic Press, 2026. ISBN 9780443135453. **(Edited volume)**

[37] P. Taurisano and **V. Dentamaro**. "Introduction to Neurodegenerative Disorders: Unraveling the Complex Interplay of Cognitive Decline". In: *Behavioral Biometrics and Artificial Intelligence for Neurodegenerative Diseases Assessment*. Academic Press, 2026, pp. 1-29.

[38] V. Dentamaro, G. Semeraro, V. Gattulli and F. Castro. "Introduction to Machine Learning and Deep Learning for Neurodegenerative Diseases Assessment". In: *Behavioral Biometrics and Artificial Intelligence for Neurodegenerative Diseases Assessment*. Academic Press, 2026, pp. 31-71.

[39] V. Dentamaro, A. Monaco and E. Sblendorio. "Wearable Sensors for Neurodegenerative Disease Assessment". In: *Behavioral Biometrics and Artificial Intelligence for Neurodegenerative Diseases Assessment*. Academic Press, 2026, pp. 91-102.

[40] E. Sblendorio and **V. Dentamaro**. "A Review of Noninvasive Sensors and Techniques for Detecting the Early Sign of Neurodegenerative Disease Using Machine Learning". In: *Behavioral Biometrics and Artificial Intelligence for Neurodegenerative Diseases Assessment*. Academic Press, 2026, pp. 103-124.

[41] V. Dentamaro. "Conclusions and Future Research Directions". In: *Behavioral Biometrics and Artificial Intelligence for Neurodegenerative Diseases Assessment*. Academic Press, 2026, pp. 333-348.

2021

[42] V. Dentamaro, D. Impedovo, G. Pirlo, G. Abbattista, V. Gattulli, C. A. Buscicchio and C. M. Fiore. "Non-Invasive Personalized In-Store Location-Based Marketing: A Practical Use Case". In: *Handbook of Research on Applied AI for International Business and Marketing Applications*. IGI Global, 2021, pp. 365-390.

[43] D. Impedovo, G. Pirlo, F. Balducci, **V. Dentamaro**, L. Sarcinella and G. Vessio. "Investigating the Sigma-Lognormal Model for Disease Classification by Handwriting". In: *The Lognormality Principle and Its Applications in E-Security, E-Learning and E-Health*. 2021, pp. 195-209.

Conference and Workshop Papers

2026

[44] L. Aversano, **V. Dentamaro** and F. Franchini. "Fuzzy Vertex-Feature Clustering Framework for Predicting Survival of Health Sector Companies and Generative Explanations". In: *2026 IEEE International Conference on Fuzzy Systems (FUZZ-IEEE)*, Maastricht, The Netherlands. IEEE, 2026, pp. 1-6. ***BEST PAPER AWARD.***

For further information:
www.cedefop.eu.int/transparency
www.europa.eu.int/comm/education/index_en.html
www.eurescv-search.com

[45] **V. Dentamaro**, F. Franchini, G. Pirlo and D. Veneto. "IntegraMed: INtelligent and Transparent Explainable System for Guided Research and Analysis in MEDicine". In: *International Conference on Breakthroughs in Artificial Intelligence*. Springer Nature Switzerland, 2026, pp. 82-96.

[46] **V. Dentamaro**, F. Franchini, S. Galantucci and G. Pirlo. "Patent-Market Correlations via Fuzzy Technology Transfer Analysis". In: *International Conference on Innovations in Computing Research*. Springer Nature Switzerland, 2026, pp. 70-78.

[47] V. D. Amodio, L. Aversano, **V. Dentamaro** and F. Franchini. "Explainable Plant Stress Classification Using Vision-Language Models and Natural Language Explanations". In: *International Conference on Innovations in Computing Research*. Springer Nature Switzerland, 2026, pp. 105-115.

2024

[48] **V. Dentamaro**, F. Franchini, I. Massaro, L. Musti, G. Pirlo and E. Sblendorio. "Explainable Gait Analysis for Early Detection of Neurodegenerative Diseases Using Unsupervised Clustering Techniques". In: *2024 IEEE International Conference on Metrology for eXtended Reality, Artificial Intelligence and Neural Engineering (MetroXRAINE)*. IEEE, 2024, pp. 861-866.

[49] **V. Dentamaro**, D. Impedovo, G. Pirlo and G. Semeraro. "Decision-Level Fusion for the Early Dementia Identification by Hand-Writing and Drawing". In: *2024 IEEE International Conference on Metrology for eXtended Reality, Artificial Intelligence and Neural Engineering (MetroXRAINE)*. IEEE, 2024, pp. 843-848.

[50] E. Sblendorio, A. Lo Cascio, D. Napolitano, F. Germini, **V. Dentamaro**, M. Piredda and G. Cicolini. "Assessing and Comparing Free Large Language Models' Responses to a Clinical Case: Accuracy, Safety, and Reliability". In: *International Meeting on Computational Intelligence Methods for Bioinformatics and Biostatistics (CIBB 2024)*. Springer Nature Switzerland, 2024, pp. 134-149.

2023

[51] F. Castro, **V. Dentamaro**, V. Gattulli and D. Impedovo. "Fall Detection with LSTM and Attention Mechanism". In: *WAMWB @ MobileHCI*. 2023, pp. 37-50.

[52] V. N. Convertini, **V. Dentamaro**, D. Impedovo, U. Lopez, M. Scalera and A. Viccari. "BOOGIE: A New Blockchain Application for Health Certificate Security". In: *World Conference on Information Systems and Technologies*. Springer Nature Switzerland, 2023, pp. 371-380.

[53] **V. Dentamaro**, P. Giglio, D. Impedovo, L. A. Moretti, G. Pirlo and E. Sblendorio. "A Benchmarking Study of Deep Learning Techniques Applied for Breath Analysis". In: *CEUR Workshop Proceedings* 3521. 2023, pp. 73-83.

[54] **V. Dentamaro**, P. Giglio, D. Impedovo and D. Veneto. "Matching Knowledge Supply and Demand of Expertise: A Case Study by Patent Analysis". In: *World Conference on Information Systems and Technologies*. Springer Nature Switzerland, 2023, pp. 321-329.

[55] **V. Dentamaro**, D. Impedovo, L. A. Moretti, G. Pirlo and P. K. Suresh. "An Approach Using Transformer Architecture for Emotion Recognition Through Electrocardiogram Signals". In: *DSTNDS*. 2023, pp. 30-52.

[56] **V. Dentamaro**, D. Impedovo, G. Pirlo and G. Semeraro. "Next Activity Prediction and Elapsed Time Prediction on Process Dataset". In: *Ital-IA*. 2023, pp. 605-609.

2022

[57] A. Coscia, **V. Dentamaro**, S. Galantucci, D. Impedovo and A. Maci. "A Novel Genetic Algorithm Approach for Firewall Policy Optimization". In: *ITASEC*. 2022, pp. 236-248.

[58] **V. Dentamaro**, V. Gattulli, P. Giglio, D. Impedovo and G. Pirlo. "Human Description in the Wild: Description of the Scene with Ensembles of AI Models". In: *Joint IAPR International Workshops on Statistical Techniques in Pattern Recognition (SPR) and Structural and Syntactic Pattern Recognition (SSPR)*. Springer, 2022, pp. 311-322.

[59] **V. Dentamaro**, P. Giglio, D. Impedovo and G. Pirlo. "Comparing Artificial Intelligence Algorithms in Computer Vision: The Weapon Detection Benchmark". In: *International Conference on Pattern Recognition and Artificial Intelligence*. Springer, 2022, pp. 72-83.

2021

[60] P. Boccadoro, D. Colucci, **V. Dentamaro**, L. Notarangelo and G. Tateo. "Indoor Localization with Bluetooth: A Framework for Modelling Errors in AoA and RSSI". In: *IPIN-WiP*. 2021.

[61] **V. Dentamaro**, V. N. Convertini, S. Galantucci, P. Giglio, T. Palmisano and G. Pirlo. "Ensemble Consensus: An Unsupervised Algorithm for Anomaly Detection in Network Security Data". In: *ITASEC*. 2021, pp. 309-318.

For further information:
www.cedefop.eu.int/transparency
www.europa.eu.int/comm/education/index_en.html
www.eurescv-search.com

[62] **V. Dentamaro**, P. Giglio, D. Impedovo and G. Pirlo. "Benchmarking of Shallow Learning and Deep Learning Techniques with Transfer Learning for Neurodegenerative Disease Assessment Through Handwriting". In: *International Conference on Document Analysis and Recognition*. Springer, 2021, pp. 7-20.

[63] **V. Dentamaro**, D. Impedovo and G. Pirlo. "An Analysis of Tasks and Features for Neuro-Degenerative Disease Assessment by Handwriting". In: *International Conference on Pattern Recognition*. Springer, 2021, pp. 536-545.

[64] **V. Dentamaro**, D. Impedovo and G. Pirlo. "Fall Detection by Human Pose Estimation and Kinematic Theory". In: *25th International Conference on Pattern Recognition (ICPR)*. IEEE, 2021, pp. 2328-2335.

[65] S. Galantucci, P. Giglio, **V. Dentamaro** and G. Pirlo. "A Case Study of Navigation System Assistance with Safety Purposes in the Context of the Covid-19 Pandemic". In: *IFIP Conference on Human-Computer Interaction*. Springer, 2021, pp. 351-354.

[66] A. Demarinis Loiotile, **V. Dentamaro**, P. Giglio and D. Impedovo. "AI-Based Clinical Decision Support Tool on Mobile Devices for Neurodegenerative Diseases". In: *IFIP Conference on Human-Computer Interaction*. Springer, 2021, pp. 139-148.

2020

[67] **V. Dentamaro**, D. Impedovo and G. Pirlo. "Sit-to-Stand Test for Neurodegenerative Diseases Video Classification". In: *International Conference on Pattern Recognition and Artificial Intelligence*. Springer, 2020, pp. 596-609.

[68] **V. Dentamaro**, D. Impedovo, G. Pirlo, G. Abbattista and V. Gattulli. "Double Deep Q Network with In-Parallel Experience Generator". In: *2020 IEEE Conference on Evolving and Adaptive Intelligent Systems (EAIS)*. IEEE, 2020, pp. 1-8.

[69] **V. Dentamaro**, D. Impedovo, G. Pirlo and A. Massaro. "Vertex Feature Classification (VFC)". In: *2020 IEEE Conference on Evolving and Adaptive Intelligent Systems (EAIS)*. IEEE, 2020, pp. 1-8.

2019

[70] **V. Dentamaro**, D. Impedovo and G. Pirlo. "Real-Time Neurodegenerative Disease Video Classification with Severity Prediction". In: *Image Analysis and Processing (ICIAP 2019)*, Trento, Italy. Springer, 2019, pp. 618-628.

[71] N. Lorusso, L. Cocola, M. T. Angelillo, A. Caldarola, S. Dilillo, F. Mastroianni, V. Zullo, G. Saracino, D. Pignatale, L. D'Errico, **V. Dentamaro** et al. "BESIDE: BEhavioral Integrated System for Diagnosis, Support and monItoring of neuro-Degenerative diseasEs". In: *Ital-IA, CINI National Conference on Artificial Intelligence*. 2019.

2018

[72] **V. Dentamaro**, D. Impedovo, G. Pirlo and G. Vessio. "A New ConvNet Architecture for Heartbeat Classification". In: *Proceedings of the International Conference on Pattern Recognition and Artificial Intelligence*. CENPARMI, Concordia University, 2018, pp. 461-465.

2015

[73] F. Lemic, J. Buesch, Z. Jiang, H. Zou, H. Jiang, C. Zhang, A. Ashok, C. Xu, P. Lazik, N. Rajagopal, **V. Dentamaro** et al. "A Realistic Evaluation and Comparison of Indoor Location Technologies: Experiences and Lessons Learned". In: *The 14th ACM/IEEE Conference on Information Processing in Sensor Networks (IPSN'15)*. ACM, 2015.

[74] D. Lymberopoulos, J. Liu, X. Yang, R. Roy Choudhury, V. Handziski, S. Sen, **V. Dentamaro** et al. "A Realistic Evaluation and Comparison of Indoor Location Technologies: Experiences and Lessons Learned". In: *Proceedings of the 14th International Conference on Information Processing in Sensor Networks*. ACM, 2015, pp. 178-189.

Preprints and Works Under Review

[75] M. Hamdan, **V. Dentamaro**, G. Pirlo and M. Cheriet. "Architecture-Agnostic Curriculum Learning for Document Understanding: Empirical Evidence from Text-Only and Multimodal Models". *arXiv:2602.21225* (2026).

[76] **V. Dentamaro**, P. Auteri and G. Pirlo. "Squeezing the Cache, Preserving the Truth: Monotonic Equipotential Allocation with Geodesia-KV". *arXiv:2608.23599* (2026).

[77] **V. Dentamaro**. "Scaling Attention to Very Long Sequences in Linear Time with Wavelet-Enhanced Random Spectral Attention (WERSA)". *arXiv:2507.08637* (2025).

[78] **V. Dentamaro**, F. Franchini, G. Pirlo and I. Voiculescu. "MuPAX: Multidimensional Problem Agnostic eXplainable AI". *arXiv:2507.13090* (2025).

[79] M. Parsapoor, H. Ghodrati, **V. Dentamaro**, C. R. Madan, I. Lazarou, S. Nikolopoulos and I. Kompatsiaris. "AI and Non-AI Assessments for Dementia". *arXiv:2307.01210* (2023).

FURTHER INFORMATION

Bibliometric indicators	Google Scholar (28 October 2026): 2,152 citations (1,727 since 2021), h-index 22, i10-index 29. Scopus (September 2026): 1,348 citations, h-index 18, 60 indexed documents.
Personal data	I authorise the processing of my personal data pursuant to Legislative Decree 196/2003 and Art. 13 of EU Regulation 2016/679 (GDPR).
Place and date	Bari, 6 November 2026