

CURRICULUM VITAE

[Erika Scaletta](#)

PhD researcher in Computer Science, XL cycle, University of Catania

1) University degrees

PhD in Computer Science (in progress), XL cycle, at the University of Catania, Department of Mathematics and Computer Science (DMI), co-funded by the National Research Centre for HPC, Big Data and Quantum Computing (ICSC), Spoke 2; supervisor: Prof. Emiliano Alessio Tramontana; expected completion: November 2027.

Master's degree in *Scienze del Testo per le Professioni Digitali*, class **LM-43 (Computing methodologies for the humanities)**; awarded on 25 September 2024 at the University of Catania, Department of Humanities (DISUM); final mark **110/110 cum laude**.

Bachelor's degree in *Lettere Moderne*, class **L-10**; awarded on 29 November 2021 at the University of Catania, Department of Humanities (DISUM).

2) Scientific, professional and teaching experience

Scientific activity

- **University of Catania, Department of Mathematics and Computer Science (DMI):** PhD in Computer Science.
Design and development of urban computing software that translates Christopher Alexander's design patterns into computable rules on open geospatial data, for the automatic evaluation of urban areas; computer vision and deep learning on aerial and satellite images (object detection and segmentation).
PhD courses: Software Engineering, Computer Architecture, Distributed Systems Engineering, Natural Language Processing.
- **Ghent University, IDLab (Belgium):** visiting PhD researcher; supervisor: Prof. Steven Verstockt.
Research on the safety of cycling races, within the research line the group develops in collaboration with the Union Cycliste Internationale (UCI): artificial intelligence models that automatically identify the dangerous points of race routes, in support of race safety assessment.
- **Instituto Superior Técnico, Instituto de Telecomunicações, Lisbon (Portugal):** international school LxMLS 2026, *Lisbon Machine Learning Summer School*, 20 to 25 July 2026.
Lectures and Python labs on neural networks, sequence models, Transformers and Vision-Language models.
- **Centro di Informatica Umanistica (CINUM), University of Catania:** research internship, 150 hours, February to June 2024.
XML-TEI encoding of a text corpus, aimed at building a digital library of modern Sicilian; co-development of the *DanteGPT* platform.

Professional activity

- **Founder of @sei_arte:** cultural and literary outreach project on Instagram, with a community of about 130,000 followers, 2016 to 2025.
Social media strategist and content creator (freelance activity): educational content, management of digital platforms, audience data analysis, advertising campaigns, collaborations with publishers and companies.

University teaching activity (University of Catania, DMI)

- **Junior tutor** in the *Etniade* project (mathematics competition), academic year 2025/2026, 30 hours. Support to the organisation of the tests, participant data management, website updates and communication.
- **Seminars in the PhD reading groups:** presentations on LLM-based agents and on the founding paper of Google, *The Anatomy of a Large-Scale Hypertextual Web Search Engine* (Brin & Page, 1998).
- **Technical and scientific mentoring of graduands** writing their thesis, degree programme in Computer Science, academic year 2025/2026.
- **Teaching support** and exam supervision for *Software Engineering* and *Computer Architecture*, December 2024 to present.

List of scientific publications

1. Scaletta E., Tramontana E., Verga G., ***Seven Rules to Evaluate Whether You Live in a Local Transport Area***, in Proceedings of the 34th *IEEE International Conference on Enabling Technologies: Infrastructure for Collaborative Enterprises (WETICE 2026)*, Palaiseau (Paris), France, 8 to 10 July 2026, IEEE. Proceedings in press.

Contribution: conception of the approach, design and implementation of the software pipeline, case study, writing of the text. Presented at the conference by the author.

2. Calcagno S., Midolo A., Scaletta E., Tramontana E., Verga G., ***Detecting Objects in Aerial Imagery Using Drones and a YOLO-C3 Hybrid Approach***, *Future Internet* (MDPI, Basel), 2026, vol. 18, no. 4, art. 204.

Contribution: construction and curation of the dataset, state of the art, writing of the related sections.

Doi: <https://doi.org/10.3390/fi18040204>

3. Calcagno S., Scaletta E., Tramontana E., Verga G., ***Aerial Image Analysis: When LLMs Assist (and When Not)***, *Future Internet* (MDPI, Basel), 2026, vol. 18, no. 2, art. 77.

Contribution: design and execution of the experimental pipeline (prompt engineering, evaluation protocol, analysis of precision, recall and accuracy, comparison with the supervised model).

Doi: <https://doi.org/10.3390/fi18020077>

4. Marletta D., Scaletta E., Tramontana E., ***User Engagement and Adaptive Optimisation in Renewable Energy Communities***, in *Product-Focused Software Process Improvement (PROFES 2025)*, Lecture Notes in Computer Science, Springer, pp. 183 to 192, 19 November 2025.

Contribution: data analysis in Python, literature review, writing of the text. Presented by the author at the A-SPPI workshop of PROFES 2025 (Salerno).

Doi: https://doi.org/10.1007/978-3-032-12092-2_13

5. Calcagno S., Scaletta E., Tramontana E., Verga G., ***YOLO-based Recognition of some Crop Categories from Real-World Aerial Images***, in Proceedings of the 33rd *IEEE International Conference on Enabling Technologies: Infrastructure for Collaborative Enterprises (WETICE 2025)*, Catania, 23 to 25 July 2025, IEEE.

Contribution: construction of the dataset with polygon annotation, writing of the text. Presented at the conference by the author.

Doi: 10.1109/WETICE67341.2025.11092212

Poster

- Calcagno S., Scaletta E., Tramontana E., Verga G., ***Aerial Image Analysis with YOLOv11-seg and LLaMA-4: Two Complementary Studies on a Real-World Dataset***, poster presented at the annual meeting of the National Centre ICSC, Spoke 2, December 2025.

URL: <https://agenda.infn.it/event/48565/contributions/281077/>

Further information

- **Teaching internship.** Liceo scientifico «Majorana-Arcoleo», Caltagirone, May 2021.
Independent teaching of Italian literature classes and support to the tutor teacher.
- **IT and digital teaching certifications.** EIRSAF Full; courses on Coding, IT tools for teaching, interactive whiteboards and tablets in teaching (Scuola Moscati, 2024).
- **Activities for the LM-43 master's degree programme of DISUM.** Social media manager and coordination of the team managing the programme's social profiles (@scienzedeltesto), 2022 to 2024.
- **Language skills.** Italian: native. English: C2 (ESOL certification).
- **Technical skills and competences.** Programming and machine learning: Python, PyTorch, Ultralytics YOLO, OpenCV, NumPy, pandas, scikit-learn; deep learning, construction and management of labelled datasets, use of large language models and multimodal prompt engineering techniques. Geospatial domain: OSMnx, Shapely, GeoPandas, QGIS, Google Places API, Roboflow. Web, data and semantic web: XML-TEI, HTML, CSS, JavaScript, PHP, SQL and MySQL, RDF, OWL, SPARQL; statistical text analysis. Tools: Git, Linux, LaTeX.
- **Academic identifiers.** ORCID: 0009-0003-3692-6091.
Google Scholar: <https://scholar.google.com/citations?user=HHEmF8QAAAAJ>.
Institutional page: <https://web.dmi.unict.it/dottorandi/erika.scaletta>.

Curriculum vitae updated on 2 October 2026.