EDOARDO DE CRISTO

Academic and Professional Curriculum Vitae

PERSONAL INFORMATION

***Name**:* *Edoardo De Cristo*
Nationality: Italian

EDUCATION

***June 2024**:* Ph.D. in Industrial and Civil Engineering (XXXVI cycle), Niccolò Cusano University, Rome

February 2020: Master's Degree in Civil Engineering, Niccolò Cusano University, Rome.
Final Grade: 110/110 cum laude.

July 2017: Bachelor's Degree in Civil Engineering from Roma Tre University.

PROFESSIONAL APPOINTMENTS

***Jan 2026– present**:* Technical Officer – Technical, Scientific and Technological Area
Roma Tre University – Permanent position.
Winner of a national public competitive examination (AM4CTEC24)

PROFESSIONAL QUALIFICATIONS

***Nov 2020**:* Professional Engineer License, Civil and Environmental Engineering sector, section A (Rome, Italy).

RESEARCH APPOINTMENTS

***Feb 2025**:* Postdoctoral Researcher, Department of Industrial, Electronic, and Mechanical Engineering (DIIEM), Roma Tre University.
Research Topic: *"Thermo-acoustic analysis of an innovative sensor-equipped green roof"* (ING-IND/11 Environmental Applied Physics).

***Feb 2024**:* Postdoctoral Researcher, Department of Industrial, Electronic, and Mechanical Engineering (DIIEM), Roma Tre University.
Research Topic: *"Development of an advanced non-contact thermometric method for measuring the thermal resistance of building walls"* (ING-IND/11 Environmental Applied Physics).

INTERNATIONAL ACTIVITIES

Dec 2025: Guest Editor for the Special Issue "*Advanced Material and Energy Challenges for Buildings*", MDPI Energies.
Link: Advanced Material and Energy Challenges for Buildings | Energies | MDPI

Jun 2023: Guest Editor for the Special Issue "*Research Trends of Thermal Comfort and Energy Efficiency in Buildings*", MDPI Energies.
Link: Advanced Material and Energy Challenges for Buildings | Energies | MDPI

Jun 2023: Participation in the 40th International Heat Transfer Conference (UIT), Assisi, Italy.
Participation in the 8th AIGE/IIETA International Conference and 18th AIGE Conference, Turin, Italy.

Jul 2019: Scholarship recipient for the Summer Program No. 2 "Structural Strengthening and Rehabilitation of Historical Buildings" organized by H2CU, University of Bologna, IUAV Venice, held at Cornell Tech, New York.

WORK EXPERIENCE

May 2025: Invited Speaker, Roma Tre Open Night 2025 (Rome, Italy).
Talk: "*THErmometric Method Enhancement for Building-Wall Thermal Resistance Evaluation (THE-METHER)*".
Presentation of ongoing PRIN research on in-situ thermal characterization of building envelopes.

Sept 2024 – Oct 2025: (A.A. 2024/2025) – Adjunct Professor – Niccolò Cusano University, Rome (LM-23 Civil Engineering)
Teaching the course "Energy Retrofit of the Built Heritage" (6 ECTS, ING-IND/11). Responsibilities included course design, lectures, exam preparation and student supervision.

Feb – Nov 2025: Research activities on Green Roof systems.
Key activities:

- In-situ thermal monitoring of an innovative ultra-lightweight, soil-free green roof prototype (GRINN-S project), including U-value assessment.
- Development and validation of TRNSYS 18 dynamic models using urban climate data.
- Comparative energy and thermal performance analysis of green roofs versus conventional and insulated roof systems under Mediterranean climate.
- PRISMA 2020–compliant systematic review on green roofs' thermal and energy performance in Mediterranean regions.

May 2024 – Mar 2025: Research activities on non-destructive methods for thermal characterization of building walls, Roma Tre University.
Key activities:

- Experimental validation of direct (HFM) and indirect (thermometric) methods for heat flux estimation.
- Development of an equivalent wall modeling approach (COMSOL Multiphysics) for multilayer walls with unknown stratigraphy
- Design and prototyping of the THE-METHER system, a low-cost, non-contact, Raspberry Pi–based thermal diagnostic device.

- Preliminary implementation of an enhanced non-contact thermometric method (ETHM) using infrared thermometry, evaluating its potential for heritage buildings.
- In-situ application of ETHM on existing buildings.

Sept 2024: Invited Speaker, European Researchers' Night 2024 (Rome, Italy): "Urban Heat Island Phenomenon in the City of Rome." Public outreach talk on urban microclimate and mitigation strategies.

Feb – May 2024: Research activities on non-destructive thermal characterization of building walls, Roma Tre University. Focus areas included experimental heat flux measurement, infrared thermography, urban heat island analysis, and climate-based energy modeling.

PUBLICATIONS IN INTERNATIONAL JOURNALS

- E. De Cristo, L. Evangelisti, G. Battista, C. Guattari, R. De Lieto Vollaro, F. Asdrubali, Annual Comparison of the Atmospheric Urban Heat Island in Rome (Italy): An Assessment in Space and Time, Buildings 13 (2023). https://doi.org/10.3390/buildings13112792.
- G. Battista, L. Evangelisti, C. Guattari, E. De Cristo, R. De Lieto Vollaro, F. Asdrubali, An Extensive Study of the Urban Heat Island Phenomenon in Rome, Italy: Implications for Building Energy Performance Through Data from Multiple Meteorological Stations, International Journal of Sustainable Development and Planning 18 (2023). https://doi.org/10.18280/ijsdp.181101.
- L. Evangelisti, L. Barbaro, E. De Cristo, C. Guattari, T. D'Orazio, F. Asdrubali, R. De Lieto Vollaro, Heat flux measurement approach for an enhanced thermometric method: preliminary tests, in: J Phys Conf Ser, 2024. https://doi.org/10.1088/1742-6596/2685/1/012051.
- L. Evangelisti, L. Barbaro, E. De Cristo, C. Guattari, T. D'Orazio, Towards an improved thermometric method: Convective and radiative heat transfer for heat flux measurement through an indirect approach, Thermal Science and Engineering Progress 49 (2024). https://doi.org/10.1016/j.tsep.2024.102479.
- E. De Cristo, L. Evangelisti, C. Guattari, R. De Lieto Vollaro, An Experimental Direct Model for the Sky Temperature Evaluation in the Mediterranean Area: A Preliminary Investigation, Energies (Basel) 17 (2024) 2228. https://doi.org/10.3390/en17092228.
- L. Evangelisti, L. Barbaro, C. Guattari, E. De Cristo, R. De Lieto Vollaro, F. Asdrubali, Comparison between Direct and Indirect Heat Flux Measurement Techniques: Preliminary Laboratory Tests, 17 (2024) 2961. https://doi.org/10.3390/en17122961.
- C. Guattari, E. De Cristo, L. Evangelisti, P. Gori, R.J. Cureau, C. Fabiani, A.L. Pisello, Thermal characterization of building walls using an equivalent modeling approach, Energy Build 329 (2025) 115226. https://doi.org/10.1016/j.enbuild.2024.115226.
- L. Evangelisti, E. De Cristo, C. Guattari, P. Gori, T. De Rubeis, S. Monteleone, Preliminary development of a non-contact method for thermal characterization of building walls: laboratory evaluation, Case Studies in Thermal Engineering (2025) 106012. https://doi.org/10.1016/j.csite.2025.106012.
- L. Evangelisti, E. De Cristo, S. Monteleone, C. Guattari, P. Gori, I. Pini, T. de Rubeis, D. Ambrosini, A New Customized Measurement System for a Non-Contact, Enhanced Thermometric Method, Energies 18 (2025) 1537. https://doi.org/10.3390/en18061537.
- E. De Cristo, L. Evangelisti, L. Barbaro, R. De Lieto Vollaro, F. Asdrubali, A Systematic Review of Green Roofs' Thermal and Energy Performance in the Mediterranean Region, Energies 18 (2025) 2517. https://doi.org/10.3390/en18102517.

- C. Grapas, A.L. Pisello, I. Pigliautile, C. Guattari, E. De Cristo, Multisensory Urban Climate Zones (MUCZ): A Framework for Mapping Dynamic Multidomain Human Comfort in Complex Urban Fabrics beyond Urban Morphology, Sustainable Cities and Society 131 (2025) 106673. https://doi.org/10.1016/j.scs.2025.106673.
- L. Evangelisti, E. De Cristo, R. De Lieto Vollaro, In Situ Winter Performance and Annual Energy Assessment of an Ultra-Lightweight, Soil-Free Green Roof in Mediterranean Climate: Comparison with Traditional Roof Insulation, Energies (Basel) 18 (2025) 4581. https://doi.org/10.3390/en18174581.
- L. Evangelisti, E. De Cristo, R. De Lieto Vollaro, In Situ Winter Performance and Annual Energy Assessment of an Ultra-Lightweight, Soil-Free Green Roof in Mediterranean Climate: Comparison with Traditional Roof Insulation, Energies (Basel) 18 (2025) 4581. https://doi.org/10.3390/en18174581.
- L. Evangelisti, E. De Cristo, S. Monteleone, C. Guattari, P. Gori, T. de Rubeis, D. Ambrosini, Development and validation of a non-contact method for U-value estimation in heritage and existing buildings, Results in Engineering 28 (2025) 107276. https://doi.org/10.1016/j.rineng.2025.107276.
- L. Evangelisti, E. De Cristo, C. Drago, G. Battista, R. De Lieto Vollaro, A monthly-adaptive sky temperature model for the Mediterranean area based on symbolic regression: development, validation and impact on building energy simulations, Energy and Buildings 353 (2065) 116910. https://doi.org/10.1016/j.enbuild.2025.116910.

CONFERENCE PAPERS

- G. Battista, L. Evangelisti, C. Guattari, E. De Cristo, R. De Lieto Vollaro, F. Asdrubali, *Urban heat island in Rome (Italy): a comprehensive analysis and implications for building energy efficiency*, 8th AIGE/IIETA International Conference and 18th AIGE Conference, June 14-15, 2023.
- L. Evangelisti, L. Barbaro, E. De Cristo, C. Guattari, T. D'Orazio, F. Asdrubali and R. De Lieto Vollaro, *Heat flux measurement approach for an enhanced thermometric method: preliminary tests*, 40th International Heat Transfer Conference (UIT), Assisi, June 26-28, 2023.

SKILLS

Languages: Italian (native)
English (B2)

Experimental skills: Thermal transmittance measurements using the HFM technique;
Thermal transmittance measurements using the THM technique;
Infrared thermography for non-contact surface temperature measurements;
Infrared thermography for emissivity measurements;
Indoor and outdoor climate measurements (air temperature, relative humidity, air velocity, mean radiant temperature);

Data acquisition systems:

- LSI Lastem systems (E-log, M-log, EST033, EST124, ESV107, ESR240);
- TESTO systems (testo 635-2, testo 400, testo 835-H1);
- LUTRON systems (TM-947SD)
- FLUKE Ti480Pro and related image analysis software

IT skills:	*Operative Systems:* Microsoft & Macintosh *Programming Languages*: Python, MATLAB *Software:* Microsoft 365; AutoCAD; FLUKE thermography software; 3DOM data management program by LSI Lastem, TRNSYS Transient System Simulation Tool (for dynamic building models), COMSOL (heat transfer in solids interface module for 2D and 3D models) software di termografia;

Rome, 28/01/2026

I authorize the processing of my personal data in accordance with EU Regulation 2016/679 and Legislative Decree 33/2013.