Curriculum Vitae – November 1, 2026

Rosa Carotenuto

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Personal Information

Date of Birth:	5 April 2001	**Place of Birth:**	Torre Annunziata (NA), Italy
Current Location:	L'Aquila (AQ), Italy	**Nationality:**	Italian

Education

- **Ph.D. in Computer Science** *2026 – Present*
  Gran Sasso Science Institute, L'Aquila, Italy
  Research on socio-technical quality assurance for Generative AI-enabled systems, with particular attention to fairness, transparency, reliability, human-AI interaction, continuous monitoring, and the proactive mitigation of emerging risks.
  Advisors: Prof. Fabio Palomba, Prof. Valeria Pontillo

- **Master's Degree in Computer Science** *2024 – 2026*
  University of Salerno, Italy
  Curriculum: *Software Engineering and IT Management*
  Final degree mark: 110/110 cum laude, awarded in recognition of an outstanding academic record
  Thesis: *"On the Impact of Prompt Engineering on Bias in Large Language Models"*
  Supervisors: Prof. Fabio Palomba, Prof. Gregorio Robles

- **Erasmus+ Traineeship** *1 March 2026 – 31 May 2026*
  Universidad Rey Juan Carlos, Madrid, Spain
  Research activity focused on fairness and bias in AI models from a Software Engineering perspective.
  Supervisors: Prof. Fabio Palomba, Prof. Gregorio Robles

- **Bachelor's Degree in Computer Science** *2021 – 2024*
  University of Salerno, Italy
  Final degree mark: 110/110 cum laude
  Thesis: *"Transparent Machine Learning for Type 1 Diabetes Diagnosis from Gene Expression Data"*
  Supervisor: Prof. Fabio Palomba

Languages

- **Italian** Native speaker
- **English** B2 level

Research Interests

- **Ethical AI in Healthcare and Human-AI Interaction:** responsible, transparent, and trustworthy AI systems in medical contexts, with attention to human-centered decision-making and the interaction between AI-based tools and human stakeholders.
- **Software Engineering for Artificial Intelligence:** software engineering practices, methods, and tools for the development, evaluation, and maintenance of AI-based systems, with particular attention to trustworthy and explainable AI.

- **Empirical Software Engineering:** data-driven and experimental studies aimed at understanding software systems, development processes, and developers' practices through evidence-based methods.
- **Social Aspects in Software Engineering:** collaboration, coordination, and socio-technical factors in software development communities, including the interaction between technical decisions and social dynamics.

Publications

[C01] **Transparent Machine Learning for Type 1 Diabetes Diagnosis from Gene Expression Data**
R. Carotenuto, *V. Pentangelo, A. Della Porta, F. Palomba*
5th National Conference on Artificial Intelligence – AI for Health and Medicine *Ital-IA 2025*

Collaborations

- **University of Salerno** Salerno, Italy
- **Universidad Rey Juan Carlos** Madrid, Spain

Selected Coursework

- **Software Engineering for Artificial Intelligence** – Grade: 30/30 cum laude
  The course focused on software engineering principles and practices for developing, validating, deploying, and monitoring AI-based systems. It provided me with a structured view of AI systems, from requirements and data engineering to validation, explainability, fairness, trustworthiness, and MLOps, helping me critically evaluate the quality and sustainability of AI-based software.
- **Software Metrics and Quality** – Grade: 30/30
  The course focused on the use of software metrics and empirical methods to assess and improve software quality. It strengthened my ability to reason about software quality through quantitative evidence, select meaningful metrics for specific goals, analyse data, and connect empirical results with practical software engineering decisions.
- **Software Dependability** – Grade: 30/30 cum laude
  The course focused on methods and techniques for analysing, testing, and verifying complex and critical software systems. It helped me develop a practical understanding of software dependability, with particular attention to quality, security, performance requirements, test case design, vulnerability detection, and verification techniques.
- **Software Project Management** – Grade: 30/30 cum laude
  The course focused on project management principles and techniques for software projects, including PMBOK knowledge areas, agile methodologies, project planning, quality management, risk management, and product management. During the course, I worked on *Lumen*, a project aimed at raising awareness of volunteering opportunities and making them more accessible. Together with another colleague, I coordinated a team of 11 undergraduate students, which helped me strengthen my ability to organize teamwork, monitor project progress, manage communication, and better understand how to identify and mitigate people-related risks within a software development team.
- **Statistics and Data Analysis** – Grade: 30/30 cum laude
  The course focused on statistical data analysis, including descriptive and inferential statistics, visualization, regression, clustering, and hypothesis testing. It improved my ability to analyse complex datasets rigorously, formulate and test hypotheses, interpret statistical results, evaluate regression and predictive models, and communicate data-driven findings clearly.

Outreach and Additional Activities

- **Kodland** *March 2025 – Oct. 2026*
  Programming Tutor
  I taught Python and Lua programming fundamentals to primary and lower-secondary school students in an online learning environment. This experience helped me improve my ability to make technical concepts accessible, adapt explanations to children's needs and interests, and encourage students to learn through experimentation, creativity, and problem solving.

- **Coding Girls** *Feb. 2025 – Apr. 2025*
  STEM Outreach Tutor
  I took part as a tutor in an outreach initiative aimed at bringing girls and young women closer to STEM disciplines and technology-related careers. I supported high-school students during workshops on artificial intelligence and design thinking, helping them develop ideas for services with a positive impact on the local community. This experience allowed me to contribute to a more inclusive representation of technology while strengthening my communication and tutoring skills.

- **PMI Challenge** *2024*
  Inter-University Challenge Participant
  I participated in an inter-university challenge with *Esistere*, a platform aimed at connecting caregivers and family members of Alzheimer's patients with medical professionals, while exploring the use of AI to support early diagnosis through MRI scan analysis. This experience strengthened my ability to connect software design with real healthcare needs and collaborate in a team.