

CURRICULUM VITAE

Fabrizio Mangione

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Short Curriculum Vitae

Fabrizio Mangione is a PhD student at the University of Calabria (Unical, Rende - Italy), under the supervision of Professor Giancarlo Fortino, IEEE fellow and highly cited researcher by Clarivate. His research interest includes Artificial Intelligence (AI), Generative AI (Gen-AI), Internet of Things (IoT), Edge Intelligence (EI).

He received the Master degree in Computer Engineering summa cum laude in 2023, from the University of Calabria with a master thesis entitled “An lstm-based approach for the prediction of vehicle trajectories in the smart city environment” (Prof. Giancarlo Fortino, Prof Noel Crespi, Prof. Roberto Minerava, Prof. Claudio Savaglio).

Fabrizio Mangione was a visiting student at the Telecom Sud Paris (FR) in 2023, under the supervision of Professor Noel Crespi and Professor Roberto Minerva. During his research period abroad, he focused on the application of AI, particularly deep learning models, in the context of smart cities. These studies are further expanded during his PhD program and culminated in 3 scientific papers published in top-level international journals and conference proceedings.

Fabrizio Mangione is currently a student member of IEEE society.

1 MAIN INFO

1.1 Personal Data

- **Birth:** 10-03-2000, Cosenza (CS), Italy.
- **Residence:** Rende (CS), Italy.
- **Email:** fabrizio.mangione@dimes.unical.it
- **Webpage:** <https://labs.dimes.unical.it/speme/people/>
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1.2 Positions

- **Current position: PhD student** with scholarship, from *March 2024*, at the University of Calabria. PhD school in “Information and Communication Technologies”, supervisor Prof. Giancarlo Fortino, co-tutor Prof. Claudio Savaglio and Prof. Francesco Pupo. Research: *Generative AI for Green and Smart IoT Applications*
- **Teaching assistant**, post-graduate course “The School Leader and the Teacher in the School of Autonomy. The Paradigm of Artificial Intelligence in the Educational Process”, from *March 2024*, at the University of Calabria.

1.3 Education

- **Master degree** in Computer Engineering summa cum laude in 2023 at the University of Calabria, Italy.
- **Bachelor degree** in Computer Engineering in 2021 at the University of Calabria, Italy.

1.4 Period of Study Abroad

- **Participant student** at Generative Modeling Summer School (TU/e, Eindhoven, Nederland), *June 2024*
- **Visiting student** at the Telecom Sud Paris Data Intelligence and Communication Engineering Lab (TSP, Paris, France), under the supervision of Prof. Noel Cresi and Prof. Roberto Minerva. *February 2023-June 2023*. Main research activity was focused on vehicle trajectory prediction with the aim to enhance traffic management, reduce congestion, and improve overall transportation efficiency, developing Machine Learning models.

1.5 Research Interest

His research primarily centers on addressing critical challenges in Gen-AI, with a strong emphasis on the fields of IoT, Smart Cities, and EI. His main contributions lie in the analysis, design, implementation, and validation of methodologies and tools that enable the creation of intelligent, interoperable, and adaptive systems. These efforts have been experimentally applied to emerging areas such as e-Health, Smart Transportation, and Industry 4.0.

In addition, he focuses on developing advanced Gen-AI models, exploring innovative architectures and techniques to enhance AI systems’ accuracy, scalability, and contextual awareness. These models seek to advance the state of automation and decision-making across various domains.

His work in IoT highlights the application of Gen-AI to improve the efficiency, security, and interoperability of connected devices. By leveraging AI-driven solutions, his research optimizes real-time data processing and fosters the development of adaptive, self-learning IoT ecosystems.

He also explores the creation of Generative Digital Twins, virtual replicas that simulate and predict the behavior of physical systems. His work in this area aims to offer more dynamic, adaptive, and data-driven solutions for sectors such as manufacturing, urban planning, and healthcare.

Furthermore, his research extends to the role of Gen-AI in education, where he investigates how AI can personalize learning experiences and develop intelligent tutoring systems. His studies focus on leveraging AI-generated content and adaptive platforms to enhance student engagement and customize educational resources to individual needs.

2 BIBLIOGRAPHY

2.1 Papers

- [C1] Qimeng Li, Fabrizio Mangione, Francesco Porreca, Raffaele Gravina, and Giancarlo Fortino. Development and validation of a proximity-based wearable computing testbed for community-oriented wearable systems. In *2024 IEEE International Conference on Pervasive Computing and Communications Workshops and other Affiliated Events (PerCom Workshops)*, pages 45–50, 2024.
- [C2] Fabrizio Mangione, Vincenzo Barbuto, Claudio Savaglio, and Giancarlo Fortino. A generative ai-driven architecture for intelligent transportation systems. *Accepted at IEEE 10th World Forum on Internet of Things*, 2024.
- [C3] Claudio Savaglio, Vincenzo Barbuto, Fabrizio Mangione, and Giancarlo Fortino. Generative digital twins: A novel approach in the iot edge-cloud continuum. *IEEE Internet of Things Magazine*, pages 1–7, 2024.

2.2 Monographies

- [T1] Fabrizio Mangione. An lstm-based approach for the prediction of vehicle trajectories in the smart city environment. Master’s thesis, University of Calabria, 2023.

Rende, Italy
October 2, 2024

 Signature
