Andrea Capone

PhD Student | Developer

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Technical Skills

- **Full-stack Developer**
- **Machine Learning**
- **Cloud Computing**
- **Multi-agent systems**
- **Data Analysis**
- **Database**

Publications

- *An Intuitionistic Version of Computation Tree Logic*. In Proceedings of the **European Conference on Multi-Agent Systems (EUMAS)**, 2025.
- *An Intuitionistic Version of Alternating Time-Temporal Logic*. In Proceedings of the **International Conference on Principles of Knowledge Representation and Reasoning (KR)**, 2025.

Projects

PhD Project: Neurosymbolic AI for Bradyseism Risk Assessment Nov 2024 – Present
National PhD in AI for Agrifood and Environment *Python, Machine Learning, Formal Methods*

- Analysis of **GNSS time series** to model ground deformation trends in the Campi Flegrei area
- Study of **sinkholes and landslides** to identify additional high-risk areas across the region
- Application of **neurosymbolic approaches** integrating **Explainable AI** with formal logics to validate seismic risk scenarios
- Collaboration with **INGV** to provide decision-support tools for risk mitigation and resilience strategies

Medical Survey System Feb 2025 – Present
Interactive Surveys for Medical Conferences *JavaScript, Firebase*

- Development of an **interactive survey platform** tailored for medical conferences, enabling real-time data collection and visualization
- Integration with **Firebase** for secure authentication, database management, and real-time synchronization
- Implementation of responsive front-end components in **JavaScript**, ensuring usability across multiple devices

VITAMIN Model Checker Feb 2024 – Present
Logic for Computer Science, Multi-Agent Systems *Python*

- Active contributor to the development and maintenance of **VITAMIN**, a state-of-the-art model checker
- Designed and implemented model checking procedures for **Intuitionistic Computation Tree Logic (ICTL)** and **Intuitionistic Alternating-time Temporal Logic (IATL)**
- Optimized core functions and improved data structure management, significantly enhancing scalability and performance

Food Talk Jun 2023 – Present
Sustainability, Software development *Python, Neo4J*

- Design and development of a system for the traceability of fruit and vegetable product
- The team is planning to collaborate with a leading company to achieve the successful implementation of the project
- The team is planning to collaborate with University of Naples for the advancement of research in this field

Theater Section Jun 2019 – Feb 2020
Human Computer Interaction - Software Development *Java, Android, Neo4J*

- Development of a system to respond to the exhibition and conservation needs of “Fondo Niccolini”
- Used Neo4J to represent data because the relationships between them are highly interconnected and complex
- The system is deployed now and operates at “Certosa di San Martino di Napoli”

Experience

Research and Development Internship Feb 2023 – Nov 2023
Maipek s.r.l. | *University Federico II, Naples, Italy*

- Conducted research and development efforts for an intraoral scanner.
- Identified the best image processing solutions for the construction of an effective point cloud.

Education

Ph.D. in Artificial Intelligence for Agrifood and Environment **Status:** Ongoing
National PhD Program in AI | *University Federico II, Naples, Italy* *Nov 2024 – Present*

M.Sc. in Computer Science, curriculum in Reliable Software Systems **Grade:** 110/110 Cum Laude
University Federico II, Naples, Italy *27 Sep 2020 – 10 Jul 2024*

B.Sc. in Computer Science **Grade:** 94/110
University Federico II, Naples, Italy *25 Sep 2014 – 18 Mar 2020*

Certifications

- Apple Developer Academy
- Agritech Student Academy

Languages

- Italian - Native Speaker
- English - Intermediate

Agreements

Autorizzo il trattamento dei dati personali contenuti nel mio curriculum vitae in base all'art. 13 del D. Lgs. 196/2003 e all'art. 13 GDPR 679/16.