



PhD in Information Technology and Electrical Engineering
Università degli Studi di Napoli Federico II

PhD Student: Roberto D'Isanto

Cycle: XXXIX

Training and Research Activities Report

Academic year: 2024-25 - PhD Year: Second

Roberto D'Isanto

Tutor: Prof. Simon Pietro Romano

Simon Pietro Romano

Co-Tutor:

Date: November 04, 2025

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1. Information:

- **PhD student: Roberto D'Isanto** **PhD Cycle: XXXIX**
- **DR number: DR997218**
- **Date of birth: 06/03/1991**
- **Master Science degree: Computer Engineering** **University: Università degli Studi di Napoli Federico II**
- **Scholarship type: no scholarship**
- **Tutor: Prof. Simon Pietro Romano**
- **Co-tutor:**
- **Period abroad:**

2. Study and training activities:

Activity	Type ¹	Hours	Credits	Dates	Organizer	Certificate ²
Preparation Course for the Cambridge	Courses	40	6	01/10/2024 - 26/11/2024	Luisa Lupoli	Y
Innovation and Entrepreneurship	Courses	16	3	05/06/2025 - 26/06/2025	Prof Pierluigi Rippa	Y
Practical Network Intrusion Detection with Machine Learning and Generative AI	Courses	14	4	01/10/2025 - 09/10/2025	Dr Giampaolo Bovenzi	Y
AI Code Generation: Foundations, Evaluation, and Security	Courses	11	3	07/10/2025 - 31/10/2025	Dr. Pietro Liguori	Y
Laboratory activity	Research	-	2,5	01/11/2024 - 31/12/2024	ARCLAB	N
Laboratory activity	Research	-	6	01/01/2025 - 28/02/2025	ARCLAB	N
Laboratory activity	Research	-	6	01/03/2025 - 30/04/2025	ARCLAB	N
Laboratory activity	Research	-	12	01/05/2025 - 30/06/2025	ARCLAB	N

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Laboratory activity	Research	-	10	01/07/2025 - 31/08/2025	ARCLAB	N
Study on Akadimos Laboratory activity (UAV Cyber Range)	Research	-	4	01/09/2025 - 31/10/2025	ARCLAB	N
Optimisation-based Control of Flexible Resources in Sustainable Energy Networks	Seminars	1	0.2	05/02/2025	Prof Luigi Glielmo	Y
Safety of highly automated driving systems	Seminars	1	0.2	29/04/2025	Prof. Luisa Verdoliva	Y
5G & DIGITAL TRANSFORMATION: A VIEW FROM AN UNCONVENTIONAL PERSPECTIVE SECOND EDITION	Seminars	4	0.8	14/03/2025	Prof. Antonia Tulino	Y
Safety of highly automated driving systems	Seminars	1	0.2	23/04/2025	Prof. Marcello Cinque	Y
Dynamic Risk Assessment in Industrial Applications: Leveraging - Bayesian Inference for Enhanced Decision-Making	Seminars	1	0.2	04/03/2025	Dr. Francesco Vitale	Y
Trusted Execution Environments for QPUs	Seminars	1	0.2	27/06/2025	Prof. Edo Giusto	Y
Guardians or Threats? AI at the Frontlines of Cybersecurity	Seminars	4	0.8	17/10/2025	Prof Antonia Tulino	Y
AI Powered User interface design	Seminars	4	0.8	24/10/2025	Prof Antonia Tulino	Y
Quality of services	Seminars	4	0.8	28/10/2025	Prof Antonia Tulino	Y

1) Courses, Seminar, Doctoral School, Research, Tutorship

2) Choose: Y or N

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2.1. Study and training activities - credits earned

	Courses	Seminars	Research	Tutorship	Total
Bimonth 1	6	0	2,5	0	8,5
Bimonth 2	0	0,2	6	0	6,2
Bimonth 3	0	1,4	6	0	7,4
Bimonth 4	0	0,2	12	0	12,2
Bimonth 5	3	0	10	0	13
Bimonth 6	7	2,4	4	0	13,4
Total (Y2)	16	4,2	40,5	0	60,7
Total (Y1+Y2)	58	13	58,7	0	129,7
Expected (Y1+Y2+Y3)	30 - 70	10 - 30	80 - 140	0 - 4.8	

3. Research activity:

During the second year of my PhD, I continued my studies in cybersecurity, with a particular focus on offensive approaches and the IoT domain.

During this period, I also participated in international Capture The Flag “LockedShields”, a NATO-organized CTF involving the armed forces of 41 countries. I contributed on the academic side to the joint Italy–Slovenia team.

From a cybersecurity perspective, I expanded my research on IoT topics by conducting experiments on UAV systems and collecting attack datasets, which in future stages could contribute to the development of a UAV-focused cyber range.

I contributed to the research activities of my research group, mainly in the AKADIMOS project.

AKADIMOS is a European project that aims to strengthen cybersecurity education and cooperation across Europe.

It is divided into several Work Packages (WPs). In the current one, the main goal was to analyze the European Cybersecurity Skills Framework (ECSF) in relation to other existing frameworks, identifying structural differences, overlaps, and potential areas for improvement.

The adopted methodology combined a comparative analysis of frameworks, a qualitative evaluation of roles and competencies, and the mapping of interdependencies among skill categories.

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The results contributed to defining enhancement strategies aimed at strengthening the ECSF and promoting a harmonized understanding of cybersecurity roles and competencies across Europe, thus supporting the long-term objectives of the AKADIMOS project.

4. Research products:

- Perrone, G., d'Ambrosio, N., D'Isanto, R., Rak, M., Russo, L., Romano, S. P., Varlese, M. (2025). One Europe, One Framework: aligning ECSF with global standards through the AKADIMOS Initiative. [pending submission]

5. Conferences and seminars attended

Attended industry conferences in the field of cybersecurity (RomHack, NoHat, ecc), not directly related to the PhD research.

6. Periods abroad and/or in international research institutions

No activity abroad.

7. Tutorship

No tutorship during this year.

8. Plan for year three

- Continuation of research on the AKADIMOS project
- Tutoring of students
- Writing of the PhD thesis.