

SIMONE ARROTINI

MSc Cybersecurity student · Sapienza University of Rome

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RESEARCH EXPERIENCE

Visiting Researcher

January – June 2026

University at Buffalo, Department of Electrical Engineering, Buffalo, NY, USA

Research visit within the Overseas exchange programme, under the supervision of Prof. Nicholas Mastronarde. Designed a machine learning based intrusion detection system for networks of unmanned aerial vehicles (UAVs), paired with a closed-loop response mechanism acting on the classifier output rather than deferring the decision to an operator. The system was evaluated in the UB-ANC Generation 2 swarm simulator against jamming, denial of service, and GPS spoofing attacks.

Built the dataset used for training and evaluation, and designed the evaluation protocol: scenario-disjoint splits, trivial baselines, and adversarial validation, to separate genuine generalisation from leakage between partitions. The work became my MSc thesis.

PUBLICATIONS

S. Arrotini, N. Mastronarde. *Closing the Loop: A Target-Aware Active IPS for Cyber-Physical Attacks on UAV Swarms with Adaptive Adversaries*. **In preparation.**

S. Arrotini, N. Mastronarde. *UB-ANC G2 SwarmAttack: A Multi-Scenario Target-Aware Dataset Collected in UB-ANC G2*. **In preparation.**

RESEARCH INTERESTS

Artificial intelligence applied to cybersecurity: network intrusion detection and web application security, with both machine learning and deep learning approaches. Particular interest in the robust evaluation of security models — how they hold up outside their training scenario and against adaptive adversaries.

EDUCATION

MSc in Cybersecurity

September 2024 – present

Sapienza Università di Roma, Rome, Italy

Coursework: Cryptography; Network Infrastructures; Distributed Systems; Statistics; Biometric Systems; Cyber and Computer Law; Ethical Hacking; Internet of Things; Practical Network Defense; Malware Analysis and Incident Forensics; Security Governance; Machine Learning Security; Risk Management.

BSc in Computer Science

September 2020 – October 2024

Università degli Studi dell'Aquila, L'Aquila, Italy

CyberChallenge.IT 2024

February – May 2024

University of L'Aquila, Italy

Admitted through the national selection test. Candidate in the 2024 edition of the national cybersecurity training programme organised by the Cybersecurity National Laboratory of CINI.

Cybersecurity lectures and seminars

2023

Leonardo, Italy

Programme of lectures and seminars on cybersecurity, closed by a Capture the Flag competition.

Advanced Java and Spring course

May – July 2023

Italy

Funded by Forma.temp, promoted by the employment agency e-work S.p.A. and delivered by FORMA.SERVICE S.r.l.

Liceo Linguistico D. Cotugno

September 2015 – June 2020

L'Aquila, Italy

Exchange placements in Germany and Poland from the third year onwards.

WORK EXPERIENCE

Waiter

Summer 2024, 2025, 2026

L'Aquila, Italy

Seasonal work alongside my studies, at Ristorante Pizzeria Antica Roma (summer 2024, summer and winter 2025) and Rifugio Montecristo (summer 2026).

Junior Java and Spring Developer

August – September 2023

Synergia SRL, Italy

One-week paid placement, awarded to the best-performing participants of the advanced Java and Spring course funded by Forma.temp.

IT Tutor and Lab Assistant - internship

2022

University of L'Aquila, Pinkamp programme

TECHNICAL SKILLS

Programming	Python, Java, C, SQL
Tools	Git, Maven, Spring, MySQL, HTML, CSS, JavaScript, React, Bootstrap
Domains	Network security, intrusion detection, machine learning security, malware analysis and incident forensics, ethical hacking, cryptography
Also	Operating systems, assembly languages, PHP

LANGUAGES

Italian	Native speaker
English	C1

PROFESSIONAL SKILLS

Problem solving · Organisation · Time management · Teamwork · Reliability and flexibility · Interpersonal skills