Carmine Calabrese

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PROFESSIONAL SUMMARY

Master's Degree candidate in Computer Science (Software Engineering and IT Management). Combines skills in software design, maintenance, and project management with hands-on experience and interest in security-oriented activities, developed through university projects and research activities.

EDUCATION

M.Sc. in Computer Science - Software Engineering and IT Management March 2024 – December 2026
University of Salerno - *Fisciano (SA), Italy* **GPA: 28.2/30 (Weighted Average)**

- **Core Coursework:** Software Project Management · Software Engineering, Management & Evolution · Software Dependability · Penetration Testing and Ethical Hacking · Data Security

B.Sc. in Computer Science 2018 – 2024
University of Salerno - *Fisciano (SA), Italy*

- **Core Coursework:** C Programming · Programming & Data Structures · Object-Oriented Programming · Database Systems · Software Engineering · Algorithm Design

KEY PROJECTS & RESEARCH

- **Software Maintenance & Mutation Testing – MuSe**: Extended the MuSe mutation testing tool by developing a wrapper plugin for Remix IDE (JavaScript), assessing the effectiveness of Solidity smart contract test suites. Published and presented at the *2026 IEEE International Conference on Software Analysis, Evolution and Reengineering (SANER)*.
- **Master's Thesis – DAPA:** *Decentralized Anonymous Authentication with Privacy-Preserving Accountability for Connected Vehicles*. Designed and benchmarked a decentralized framework combining blockchain and Zero-Knowledge Proofs (ZKP) to ensure vehicular privacy with accountable revocation.
- **Project Management – EcoHouses:** Project Manager of a 7-student Scrum team: sprint planning, backlog and deadline tracking, with hands-on contributions to the architecture and the React/PostgreSQL implementation.
- **Penetration Testing & Ethical Hacking – Deathnote 1**: Full assessment of a VulnHub machine, from reconnaissance and vulnerability mapping (Nmap, WPScan, Nessus, OWASP ZAP) to SSH exploitation and privilege escalation (LinPEAS, sudo misconfigurations).
- **Secure Programming CTF – Nebula Level 14**: Black-box reverse engineering of a position-dependent encryption algorithm, an automated Python decryptor to recover credentials, and privilege escalation on Linux.

SKILLS & COMPETENCIES

Programming Languages:	Java · Python · C · JavaScript
Software Engineering:	Software Maintenance & Evolution · Test-Driven Development (TDD) · Mutation Testing · Scrum
Cybersecurity & Pentesting:	Penetration Testing · Vulnerability Assessment · Kali Linux · Nmap · Nessus · OWASP ZAP · WPScan · LinPEAS
Web Development & Databases:	HTML · CSS · React · MySQL · PostgreSQL · PostGIS · MongoDB
Tools, DevOps & Blockchain:	Git · GitHub · Docker · GitHub Actions · CI/CD · Blockchain · Zero-Knowledge Proofs (ZKP)

LANGUAGES

Italian: Native **English:** B2 (Upper Intermediate)

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