# Luca Palumbo

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Computer Science student with a background in Physics, passionate about cybersecurity and low-level systems. Active CTF player with Fibonhack since 2020, specializing in binary exploitation and reverse engineering. Currently **practicing malware analysis** by reversing malware samples. Also member of the University of Pisa Formula SAE team, (Driverless division) E-Team.

## Education

**University of Pisa** Expected 04/2027
*Master of Science in Computer Science (GPA: 4.00 / 4.00)* *Pisa, Italy*

- Transitioned from Theoretical Physics to Computer Science to pursue interests in cybersecurity.

**University of Pisa** 2024
*Bachelor of Science in Physics (GPA: 3.76 / 4.00, Final grade: 110/110 with honors)* *Pisa, Italy*

## Experience

**University of Pisa, Department of Computer Engineering** Mar–Jun each year, 2021–2025
*University Tutor — CyberChallenge.IT Cybersecurity Program* *Pisa, Italy*

- Delivered practical training in binary exploitation, covering buffer overflows (BOF), out-of-bounds (OOB) access, format string vulnerabilities, and advanced techniques such as return-oriented programming (ROP) and return-to-libc attacks.
- Demonstrated methods for bypassing modern protection mechanisms including Position-Independent Executables (PIE), Address Space Layout Randomization (ASLR), and stack canaries.
- Led hands-on sessions on reverse engineering and debugging using tools such as Ghidra, gdb, z3-solver, and `LD_PRELOAD` hooking.

## Projects

**CTF Writeups** | Reverse Engineering, Malware Analysis

- Developed detailed writeups and solutions for reverse engineering CTF challenges

**Ghidra-Unstrip** | Python, Ghidra, Reverse Engineering

- A tool to restore stripped ELF binaries by injecting symbol tables and DWARF info extracted from Ghidra analysis, enabling seamless debugging with GDB and standard tools.

## Technical Skills

**Programming Languages:** Python, C, C++, Rust
**Security & Reverse Engineering Tools:** Ghidra, IDA Free, Frida, gdb, x64dbg, Wireshark, fakenet-ng, Burp Suite
**Development & Systems:** Git, Docker, Linux (proficient), Bash scripting

## Awards

**CTF challenges author and partecipate in numerous CTF competitions** 2022–Present
*Fibonhack team*

- Active member of the Fibonhack team, participating international competitions including m0leCon CTF (IT), HackTM (RO), DefCampCTF (RO), SnakeCTF (IT), and LakeCTF (CH). I am also challenge author for the upcoming CTF (qualifications and final) at Romhack-camp 2026

**OliCyber — Gold Medal** 2021
*Cybersecurity National Lab (CINI)*

- Italian national cybersecurity olympiad for high school students. Achieved a full score in the software security category and received an honorable mention for earning the first blood on a challenge.

**CyberChallenge.IT Finals — 1st Place** 2020
*Cybersecurity National Lab (CINI)*

- Selected to represent the University of Pisa at the national finals through a Jeopardy-style CTF qualification.
- Team achieved 1st place in the national Attack-Defense CTF competition.