Giovanni Santini

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Education

BS **University of Trento**, Computer Science   Sept 2022 – Now

- **Coursework:** Computer Architecture, Operating Systems, Parallel Computing, Algorithms and Data Structures, Databases, Networking, Software Engineering, Calculus 1, Introduction to Computer and Network Security, Formal Languages and Compilers, Probability, Programming 1 and 2, Advanced Programming, Physics 1, Functioncal Programming, Linear algebra, Mathematical Foundations for Computer Science, Introduction to Web Programming, Logic, Introduction to Machine Learning

Cyberchallenge, Cybersecurity CTF Course and Competition   March 2021 – July 2021

- I participated in the cybersecurity course *Cyberchallenge* in 2021, held at the Università Politecnica delle Marche, achieving *first place* in the internal competition and qualifying for the national Attack and Defense competition. The course introduced me to the fundamental concepts of cybersecurity with a hands-on approach through the CTF (Capture The Flag) format.

Projects

Hive-ebpf kubernetes operator   github.com/San7o/hive-operator

- I am developing an eBPF-based inode access logging tool for kubernetes clusters. The project is supervides by Bruno Crispo from the University of Trento.
- **Languages and Frameworks**: C, Go, Kubernetes, eBPF

Baldo Scanner   github.com/San7o/Baldo-Scanner

- I developed an antivirus damenon written in C++ and a linux kernel module. It incorporates static malware analysis capabilities through signatures and rules, a simple kernel level firewall, a sandboxed execution environment, and a kernel module to collect information about calls to system calls.
- **Languages and Framewroks**: C, C++, kprobes, netlink, character devices, sqlite, cmake

valFuzz   github.com/San7o/valFuzz

- A modern and cross-platform library for multi-threaded testing, fuzzing and benchmarking for C++17 code. The library lets the user quickly benchmark functions and produce reports in different formats, It's been used in different projects such as tenno-tl and for my parallel computing coursework.
- **Languages and Framewroks**: C++, cmake

Certifications

NVIDIA, **Fundamentals of Accelerated Computing with OpenACC**, Hackathon 1° place   Dec 2024

- I partecipated in a two days workshop introducing the basics of accelerated computing using OpenACC, a powerful directive-based programming model. I learned how to optimize and parallelize code to fully leverage the capabilities of modern GPUs and CPUs.
- The event ended with an hackathon about optimizing a machine learning model, I achieved first place.