FILIPPO MUSCHERÀ

Computer Engineer

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PROFILE

M.Sc. Computer Engineering student, currently writing my thesis, with experience studying abroad in Sweden through Erasmus. I'm interested in machine learning and AI, cloud and distributed systems, and cybersecurity. I enjoy learning new technologies quickly and gaining practical experience in several areas.

EDUCATION

M.Sc. in Computer Engineering
Università degli Studi di Roma "Tor Vergata"

📅 Mar 2023 – Present   📍 Rome, Italy

B.Sc. in Computer Engineering
Università degli Studi di Roma "Tor Vergata"

📅 Sept 2018 – Feb 2023   📍 Rome, Italy

- Final grade: 108/110

Scientific High School Diploma
Liceo Scientifico "Ettore Majorana"

📅 Sept 2013 – Jul 2018   📍 Rome, Italy

EXPERIENCE

Erasmus+ Programme
Blekinge Tekniska Högskola (BTH)

📅 Jan 2025 – Jun 2025   📍 Karlskrona, Sweden

- Completed a **6-month** study period within the M.Sc. in Computer Engineering.
- Focused on courses in **Compiler Design, Research Methodologies, Data-Driven Development and Decision Support Systems**.
- I have worked on several group projects, enhancing my communication skills, English proficiency, and collaboration and teamwork abilities in an **international environment**.

PROJECTS

AI & Machine Learning
📍 Università degli Studi di Roma "Tor Vergata"

- Implemented and compared various **Machine Learning** and **Convolutional Neural Network** (CNN) models to classify a compressed version of the images in the MNIST-Pneumonia database, reaching 98.3% accuracy. Available in GitHub

Data Driven Development
📍 Blekinge Tekniska Högskola

- Applied **Transfer Learning** and a **Transformer** model for **Sentiment Analysis** on Airbnb reviews, then developed regression models for listing price prediction. Conducted **data analysis and visualization** to interpret model outputs and findings, available in GitHub

Cloud and Distributed Systems
📍 Università degli Studi di Roma "Tor Vergata"

- Designed and implemented a **distributed Key-Value Store** service in **Go**, supporting Sequential and Causal Consistency protocols. Deployed and tested the solution using **Docker Compose** on **AWS EC2** instances. Available in GitHub

Malware Analysis
📍 Università degli Studi di Roma "Tor Vergata"

- Executed **Malware Reverse Engineering** (static and dynamic analysis) on a Windows executable. The analysis identified a two-stage attack involving code injection via Asynchronous Procedure Call and subsequent runtime de-obfuscation of the shellcode to reveal its C2 protocol. Available here

Software Testing
📍 Università degli Studi di Roma "Tor Vergata"

- Designed and executed **Unit** and **Integration Tests** for two Apache software projects, leveraging tools like PIT Mutation Testing and JaCoCo for coverage analysis. Automated the testing workflow using **GitHub Actions**. Available here

LANGUAGES

- Italian – Native
- English – B2 (Cambridge FCE Certificate)

SKILLS

Programming Languages & Frameworks

C | Python | Go | Java | Kotlin | JUnit
Jetpack Compose

Data Science & Machine Learning

TensorFlow | NumPy | Pandas | Matplotlib
CUDA/cuDNN

Cloud & Tools

Docker | Docker Compose | AWS EC2 | Git
GitHub Actions | Linux | Network Simulation / GNS3
MySQL | Ghidra | Bash Scripting

Soft Skills

Problem Solving | Teamwork
Communication | Fast Learner
Organization | Planning