Marco Bertoni

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Summary

I strongly believe in balancing theoretical knowledge with real life uses.

My technical school degree taught me practical skills in microcontroller programming, analysis and design of electronic circuits.

My bachelor studies was comprised of a standard computer science curriculum while retaining multi-disciplinarity with related engineering fields: Signal Processing, Information Theory, Control Theory, Computer Architecture, Logic Design, Analog and Digital Electronics.

In my Masters I'm delving into more theoretical Computer Science topics: Theory of Computation, Type Theory and Formal Logic (via Curry-Howard correspondence), Formal Verification Techniques (with applications to Cryptography and Concurrent Systems), Compilers and Programming Languages Theory and Design.

As can be seen by my work/extracurricular experiences, I always tried to supplement what I learn in university with real-world experiences.

Work Experience

Teaching Assistant Università di Bologna (IT) | Feb 2024 - Ongoing

- **Cybersecurity** (undergrad level), prof. M. Prandini:
  I held the lab session lecture on Binary Exploitation (Buffer Overflow techniques) and generally help with laboratory exercises.
- **Compilers** (graduate level), prof. C. Laneve:
  Currently assisting the professor with the creation of the project work assignment (parser and code analyzer for python programs)
  I held a few exercise sessions on regular, context-free grammars

Network Engineer Laboratori Guglielmo Marconi (IT) | Feb 2021 - Sep 2022

- Main operator on a system integration project for a big Italian financial institution
- Planning and execution of various networking and SysAdmin projects
- In depth debugging of network issues (Linux, OpenBSD, L2/L3 equipment)

Java Tomcat/Android Programmer K5 spa (IT) | Oct 2018 - Oct 2019

- Lone programmer with the task of maintaining and extending an existing software solution
- Simple Java Tomcat, MySQL and Android client stack
- I was not provided the source code for the project so I reverse engineered it

Assembly line worker SmartTroniks (SLO) | Oct 2017 - Nov 2017

- MOVING GENERATION 2020 ERASMUS+ PROGRAM
- Assembly and soldering of electronic boards for further processing

Projects

UniBo Driverless Oct 2022 - Feb 2024

– Research team on Autonomous Driving Systems
– Main focus: compete in the F1TENTH racing championship
– As one of the top contributors I raced at ICRA London 2023
– Took part in the recruitment, selection and onboarding of new members

Cyberchallenge / Ulisse Mar 2020 - Dec 2022

– Cybersecurity focused lessons, with weekly exercises
– Me and the other top 4 students represented UniBo at a national competition
– I competed in cybsec CTFs with the Ulisse CTF team

Education

2022 - ongoing	M.Sc. Computer Science at **Università di Bologna**	(ECTS: A)
2018 - 2021	B.Sc. Computer Engineering at **Università di Bologna**	(ECTS: C)
class of 2018	Electronics Technical School at **IIS O.Belluzzi**	

Skills

Natural Languages:	English (C1) - Italian (Native) - French, German (Basic)
Programming (Mastery):	Java, C, python3, SH, vim, awk Ready for a whiteboard interview using these (they are all Turing complete!)
Programming (Fluency):	Scheme LISP, SQL, AMD64 ASM, ROS2, MiniZinc, Scala, Erlang, libvirt I can easily use these technologies with some reference checking.
Linux Kernel:	I spent lots of time on Elixir Bootlin chasing NIC performance issues. I have general knowledge on the main kernel structures and patterns, especially but not limited to the network stack.
Security:	In my CTF days i specialized in breaking Cryptography and Binary Exploitation challenges, but I also have basic knowledge on the main attack vectors used in real-world scenarios. While working at Laboratori Guglielmo Marco I was assigned to the design and development of a Suricata-based Intrusion Detection System for a few months.