



# Alessandro Conti

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## SUMMARY

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I am a Master of Science student in computer science and engineering at the Polytechnic of Milan. I am very passionate about cybersecurity, operating systems, and software development.

## PROJECTS

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### Constant\_Time-Parallel\_Shuffling

[Repository](#)

Shuffling arrays in constant time is a common problem in modern cryptography. This project involves analysing the technique proposed by Daniel J. Bernstein in Python, and implementing it in C employing parallelization.

The project includes porting the DJB code from Python to C, in both sequential and parallel versions. In addition to simple transcription, the project also analyses the computational complexities of the algorithms, providing a basis for optimisation and benchmarking.

### Progetto\_API\_2023

[Repository](#)

This project manages a motorway with single-distance stations, each equipped with electric rental vehicles with variable range. A journey is a sequence of stages with no possibility of turning back, renting a vehicle at each stage. The goal is to find the route with the minimum number of stages between two stations; in the event of a tie, preference is given to the stages closest to the start of the motorway.

### Progetto\_Ingegneria\_del\_Software\_2023

[Repository](#)

This project implements an online version of the board game 'My Shelfie'.

### Progetto\_Reti\_Logiche\_2023

[Repository](#)

This project implements a hardware module in VHDL that acts as an interface between a memory and four output channels. The module receives serial instructions relating to a memory address and the desired output channel.

The system receives input data via a single serial bit indicating the memory address from which to retrieve the data and the corresponding output channel. The system outputs consist of four parallel channels that transmit the entire memory word.

### Fault-Tolerant\_Data\_Flow

[Repository](#)

This project implements a distributed data flow platform for processing large amounts (big data) of key-value pairs, where keys and values are integers.

The platform includes a coordinator and multiple workers running on multiple nodes of a distributed system. The coordinator accepts data flow programmes specified as an arbitrarily long sequence of the above operators.

### Code\_Kata\_Battle

[Repository](#)

Code Kata Battle is a platform that helps students improve their software development skills by training with peers on code data.

## Sorting\_Network

[Repository](#)

This project implements several sorting networks.

The sorting networks implemented are: odd-even transposition sort, odd-even mergesort, bitonic sort, LS3 sort, 4-way mergesort, rotatesort, 3n sort of Schnorr and Shamir, 2D odd-even transposition sort and shearsort.

## EDUCATION

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2023 - present    Master of Science (Computer Science and Engineering - Ingegneria Informatica) at **Polytechnic of Milan**

2020 - 2023      Bachelor's Degree (Ingegneria Informatica) at **Polytechnic of Milan**

2015 - 2020      High School (Liceo Scientifico opzione Scienze Applicate) at **I.I.S. James Clerk Maxwell, Milan**

## SKILLS

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Programming Language	C, C++, Java, Python, Bash, JavaScript
Frontend Languages	HTML, CSS
Query Languages	SQL
Operating System	Linux, Windows, macOS
Documentation	Latex, Markdown
Version Control	Git, GitHub
Database Management System	MySQL
Software	Microsoft Office, OnlyOffice, LibreOffice, TeamViewer, WireShark