

# Federico Marra

MSC STUDENT IN COMPUTER SCIENCE AND ENGINEERING @ DTU · SOFTWARE ENGINEER

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## Education

### DTU (Technical University of Denmark)

Kongens Lyngby, Copenhagen,  
Denmark

MASTER COURSE IN COMPUTER SCIENCE AND ENGINEERING

September 2024 - PRESENT

- **Address:** Anker Engelunds Vej 1, Kongens Lyngby, Copenhagen, Denmark
- **Website:** <https://www.dtu.dk/english/>
- **Type of credits:** ECTS – **Number of credits:** 120
- **Current GPA:** 9,58/12
- **Courses:** Data Security (02239), Model Predictive Control (02619), Program Verification (02245), Software Engineering 2 (02162), User Experience Engineering (02266)

### UNIFI (University of Studies of Florence)

Florence, Italy

BACHELOR COURSE IN COMPUTER ENGINEERING

September 2019 - April 2024

- **Address:** Piazza S.Marco 4, 50121 Firenze (Italy)
- **Website:** <https://www.ing-inl.unifi.it/index.html?newlang=eng>
- **Type of credits:** ECTS – **Number of credits:** 120
- **Final grade:** 91/110 – **GPA:** 23.5/30

### Scientific Lyceum Guido Castelnuovo

Florence, Italy

SCIENTIFIC HIGH SCHOOL

September 2014 - June 2019

- **Address:** Via Alfonso la Marmora 20, 50121 Firenze (Italy)
- **Website:** <https://www.liceocastelnuovo.edu.it>

## Skills

<b>DevOps</b>	Docker, Github, Jira
<b>Back-end</b>	Python, Java, C, C++, Rust
<b>Front-end</b>	Typescript, React.js, HTML, CSS, Javascript, Angular, Ionic
<b>Programming</b>	Node.js, Python, Java, C, C++, Matlab, Rust, LaTeX
<b>Languages</b>	Italian (Mother tongue), English (C1), French (A2), Danish (A1.1)
<b>Driving License</b>	B

## Work Experience

### SNAP4 S.r.l.

Sesto Fiorentino, Florence, Italy

SOFTWARE ENGINEER

March 2024 - August 2024

- I developed eShare in a Snap, first car sharing and car pooling app in Italy.
- **Technology:** Typescript, Angular, Ionic, Firebase, Capacitor
- **Snap4:** <https://www.snap4.eu>
- **eShare in a Snap:** <https://www.snap4.eu/products/eshare-in-a-snap-sustainable-mobility.html>
- **eShare in a Snap App Store:** <https://apps.apple.com/us/app/eshare-in-a-snap/id6572306097>
- **eShare in a Snap Google Play Store:** [https://play.google.com/store/apps/details?id=com.snap4.eShare\\_in\\_a\\_Snap](https://play.google.com/store/apps/details?id=com.snap4.eShare_in_a_Snap)

### Private Tutor

Florence, Italy

PRIVATE TUTOR

March 2023 - February 2024

- I tutored students in middle school mathematics, high school mathematics, and fundamentals of informatics at the university level for three different individuals.

### Italian Republic

Florence, Italy

ELECTION SCRUTINEER SECRETARY

September 2022

I served as the secretary in charge of counting ballots for international votes during the Italian Parliament election on 25<sup>th</sup> of September 2022, Florence, Italy

SCHOOL-WORK ALTERNANCE

June 2017 - June 2018

- **Observatory in Chianti:** Design of an educational path summarizing the history of the universe. Tasks included brainstorming, selecting key eras, creating bilingual content (Italian and English), and designing panel supports. Skills acquired: deep understanding of the universe's history, firsthand observation of an astrophysicist's work.
- **University Hospital Company Meyer:** Observation of pediatricians in the Rheumatology Department, assisting with patient visits and understanding the medical profession. Skills acquired: insights into the challenges of being a doctor, knowledge of rheumatology, including conditions like Lupus and Juvenile Idiopathic Arthritis (JIA).
- **Caritas Florence:** Creation of a file compiling the services offered by Caritas Firenze, mapping various locations in Florence and the positions of clothing recycling bins. Skills acquired: basic use of Photoshop and GIMP, understanding of the internal organization of the association.

## Projects

## DAPM, Distributed Architecture Process Mining

DTU

UNIVERSITY PROJECT

Fall Semester 2024

- In collaboration with my fellow students, as Software Engineering 2 project we extended two master thesis about DAPM Frontend and Backend, adding some new functionalities like process mining pipelines managing and access control to the distributed platform.

**Technology:** Docker, Typescript, React, C#

## Four Tanks MPC, Model Predictive Control

DTU

UNIVERSITY PROJECT

Fall Semester 2024

- In collaboration with a fellow student, as Model Predictive Control exam we implemented PID Controllers, Kalman filters, MPC, Non-linear MPC to a four tanks system.

**Technology:** MPC, Matlab, CasADi

## Authentication, ACL and RBAC

DTU

UNIVERSITY PROJECT

Fall Semester 2024

- In collaboration with my fellow students, as Data Security project we implemented authentication, access control list and role based access control for a platform.

- **Technology:** Java

**GitHub repository:** <https://github.com/jackstefa/dtu-ds-authentication>

## Automated Verification

DTU

UNIVERSITY PROJECT

Fall Semester 2024

- In collaboration with my fellow students, as Program Verification project we implemented an automated verification tool for slang.

- **Technology:** Rust, Viper

**GitHub repository:** <https://github.com/tornado80/program-verification-project1>

## Frontend Platooning Simulation

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- In collaboration with a fellow student, as final project thesis we made a frontend Typescript simulation of the vehicle platooning phenomenon. We used the following libraries: React for UI rendering, Next.js for rendering server-side, p5.js to frame the canvas, Chart.js for graphic rendering and Paraglide.js for internationalization. It has also been written a thesis paper.

- **Technology:** Typescript, React.js, Next.js, p5.js, Chart.js, Paraglide.js

- **GitHub repository:** <https://github.com/albbus-stack/platooning-simulation>

**Simulation website:** <https://platooning-simulation.vercel.app>

## Diabetes Management Java app

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- Java application for the management of a patch pump or insulin infusion device in people affected by diabetes. It also allows a local database and a backup database containing the historical records of the performed operations.

- **Technology:** Java

**GitHub repository:** <https://github.com/federicomarra/swe-diab>

## Snap4All Android Java app

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- In collaboration with the DISIT Computer Engineering Unifi department and a fellow student, an app for Android systems has been made in Java that allows the use of NODE-Red on an Android device, with the possibility of importing your own flows. In addition, the app has also been aesthetically updated and a wiki page has been added.

- **Technology:** Java, Termux, NODE-Red

**GitHub repository:** <https://github.com/albbus-stack/snap4all>

## DataScience project of comparison of Algorithms and Data Structures

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- Jupyter notebook comparing Insertion Sort and Quick Sort algorithms, followed by a comparison of data structures Binary Search Trees and B-Trees.

- Link to the GitHub repository.

- **Technology:** Python, Jupiter Notebook

**GitHub repository:** <https://github.com/federicomarra/asd-lab>

## Timer, Clock and Chronometer C++ app

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UNIVERSITY PROJECT

- C++ realization of a terminal executable app that works as a timer, clock and stopwatch using the Ncurses library.

- **Technology:** C++, Ncurses

**GitHub repository:** <https://github.com/federicomarra/timer-clock-chronometer>

## Clone website Newspaper Il Post

UNIFI

UNIVERSITY PROJECT

- Creation of a clone website of Il Post using only HTML and CSS.

- **Technology:** HTML, CSS

- **GitHub repository:** <https://github.com/federicomarra/federicomarra.github.io>

- **Clone website:** <https://federicomarra.github.io/ilpost>

## Extracurricular Activity

### Podcast Cohost

MACCHERONI PODCAST

December 2022 - PRESENT

- I have honed my public speaking skills by engaging in in-depth discussions on a wide array of topics, including culture, personal development, and current events. This role has enhanced my ability to communicate effectively and think critically.

### DTU Football Club

AMATEUR FOOTBALLER

December, 2011 - PRESENT

- I have been playing football since I was 11 years old, and I have played as a central forward in a second division team called Cobra Kai and now I am playing for DTU Football club.