



## Matteo Cerutti

11/07/1996

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## ABOUT ME

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I became a computer engineer in order to follow my passion, learning during my academic and working years that it has to be supported by my own effort and my own dedication. Through the analysis of a problem, mixing a logical approach and a bit of creativity, it's possible to achieve any goal. The more interesting and intriguing is the challenge, the greater the reward in knowledge and satisfaction will be. The help of other people in the team is crucial, and creating good relationships with them allows to achieve better results.

I am keen on sports, regularly playing football and snowboarding, and of video games, when I have enough free time. I also like to participate in events where my professionalism can be improved and tested, such as hackathons and code challenges.

## EDUCATION

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2018 - 2021

### Master's Degree in Computer Engineering

Path: **Data Science**

Politecnico di Torino

Thesis: **Automatic classification of healthy or diseased plants using images**

*Research work aimed at the **automatic identification** of **problematic plants** in orchards, through the use of a predictive model capable of analysing **images taken by drones**, with the ultimate goal of favouring an early and targeted intervention on plants identified as possibly diseased.*

*The project was divided into different phases: a **market analysis** for purchasing a suitable drone and a support **application** for **automatic flight plans**' definition; a design of a **repository** for the **images** and the **data** useful for the predictive model; the choice and the use of **neural network models** with the following **training, testing** and **performance comparison** between different architectures.*

Characteristic courses:

- **Big data:** architectures and data analytics
- **Data Science** and Databases technologies
- **Data spaces**
- **Machine Learning** and **Artificial Intelligence**

Supervisors: Morisio M., Ardito L.

Final grade: 102/110

2015 - 2018 **Bachelor's Degree in Computer Engineering**

Politecnico di Torino

Final grade: 101/110

2015 **High School Diploma Scientific Studies - Path Applied Science**

## PROFESSIONAL EXPERIENCE

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2018 - now **Back-end software developer**

Coolshop S.r.l - Turin - Italy

*The work was mainly focused on a single project from its early development (2018) until the public release of the platform (2020), and then continued within the AMS team until early 2022.*

*The project had the aim of creating a platform for the sales management of a large European work vehicle supplier.*

*The technology stack was composed of **back-end services** developed with the **.NET** framework (**C#** language), with the support of two different databases: one **noSQL (CouchDB)** and one **mySQL**. The front-end services, on the other hand, were developed using the AngularJS framework mostly and React library for some components (JavaScript language). Moreover, the platform was available for mobile devices, using the **Xamarin** framework for cross-platform development.*

*My work was focused on the back-end, including database management and **release infrastructure** definition (a **microservices** architecture on **Kubernetes cluster**).*

*During this time, I worked also on another project with a similar technology stack, but for another vendor and available via web browser only.*

*Finally, since the beginning of 2022, I have been working in a different project with similar goals to the previous ones, but different technology stack: **back-end services** written in **PHP** language, with the support of a **mySQL** database, while front-end services were using AngularJS and some components were written with in React. As in previous projects, my work was focused on the back-end side.*

Apprenticeship until 02 July 2021. After permanent employment.

2018 **Back-end software developer (Stage)**

Coolshop S.r.l - Turin - Italy

*Curricular internship included in the Bachelor's degree in Computer Engineering (250 hours).*

*The work was focused on the design and development of a **company platform** with the aim of managing holiday requests, employee training, roles and department composition, and displaying the skills of each person in the company.*

*The technological stack of the platform was composed by the **Symfony 3** framework, in **PHP** language, on the **back-end** side, and on the **front-end** side a combination of **Twig templates** for graphics and **Javascript** scripts for client-side management, with the support of the **EasyAdmin** library for page definition. **Google APIs** were also used for **authentication** and **calendar management**.*

*Near the end of the internship, the platform was published within the company in order to be used.*

## INTERNATIONAL EXPERIENCE

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Summer 2015 **Back-end software developer**

Nexolutions - Plymouth - United Kingdom

*As part of the "**Master dei Talenti**" project promoted by the CRT foundation, aimed at a period in a foreign country to gain work experience.*

*The work concerned the software development for **e-commerce** web applications, mainly using the **PHP***

language. The main objective was to find solutions within already developed code and to implement **new features** within the applications, such as the management of **payment by credit cards**.

## CURRICULAR PROJECTS

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- 2019 - 2020 **Live text editor**  
Team project - course of System Programming (Master's Degree)  
*Development of a **persistent live text editor** with **concurrency** between different clients, even on the same files. The platform was on **Windows system** developed in **C++** language, with the use of a **noSQL** database (**MongoDB**) and the **Qt5** framework for graphics.*
- 2020 **Second-hand market application**  
Team project - course of Mobile Application Development (Master's Degree)  
*Android application for managing **the market of second-hand products** developed in Kotlin language, using Google Firebase services for managing authentication and data persistence.*
- 2019 - 2020 **"Emotions from music spectrograms"**  
Team project - course of Artificial Intelligence and Machine Learning (Master's Degree)  
*Research project for the definition of an artificial intelligence algorithm, based on neural networks, able to understand the emotions expressed in audio files, using their spectrogram. Different datasets were used for the networks' training part and the testing one: for the training audio of actors acting a specific emotion; for the testing, pieces of songs manually classified according to the felt emotions. The neural networks' architectures used were: GoogLeNet, VGG and ResNet. The Google Colab platform was used for the analyses, developing the scripts in Python code using the Pytorch libraries.*
- 2021 **"Ionosphere prediction task"**  
Individual project - course of Data Spaces (Master's Degree)  
*Project for analysing a specific dataset (Ionosphere) with the aim of identifying a high-performance artificial intelligence algorithm capable of making predictions on the specific type of data. The algorithms used were: logistic regression, decision tree, random forest and SVM with different kernels. The software Orange was used for the analysis.*

## LANGUAGES

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- Italian** Mother language
- English**
- 2014 Cambridge English First Certification (**FCE**): level **B2**

## IT SKILLS

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- Programming languages** C#, Python and PHP (Professional)  
C++, C, Kotlin, Java, Assembly x86 and Assembly ARM (University)
- Framework** Xamarin, .NET and Symfony (Professional)  
Apache Hadoop, Apache Spark and React Native (University)
- Software DevOps** Kubernetes, Docker and Git
- Tools** GitLab and Jira