



# Piero Macaluso

Master of Science Computer Engineering Student at Politecnico di Torino

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## Education

### Politecnico di Torino

#### Master of Science in Computer Engineering - Software Career

Turin, Italy

Oct. 2017 - Exp. Mar. 2020

- **Master Thesis:** Model-Free Reinforcement Learning algorithms applied to an autonomous driving task with a small real world robot.
- **Research Centre:** EURECOM - Sophia Antipolis, Biot 06410, France
- **Supervisors:** Prof. Pietro Michiardi (EURECOM) - Prof. Elena Baralis (Politecnico di Torino)

### Politecnico di Torino

#### Bachelor in Computer Engineering (184 CFU)

Turin, Italy

Sep. 2014 - Oct. 2017

- **Final Mark:** 110/110 cum laude

### Liceo G.D. Cassini

Sanremo, Italy

#### Liceo Scientifico P.N.I. Diploma

Sep. 2009 - Jul. 2014

- **Final Mark:** 100/100 cum laude

## Professional Experiences

### EURECOM - Graduate School and Research Center in Digital Sciences

Sophia Antipolis (Biot), France

#### Undergraduate Visiting Researcher Student

Mar. 2019 - Now

- I spent one semester of my degree path at Eurecom, a leading research centre in France, to work on the project of my master thesis. During this experience, I developed my knowledge about Reinforcement Learning (RL) implementing a control system for a small toy robot where to exploit and compare the model-free RL algorithms to make it learning how to drive. We focused on real-world experiences using the front camera of the robot as input, without the aid of simulators or models of the environment.

#### Skills and knowledge acquired:

- Deepening my knowledge about machine learning, deep learning and improving my skills with Python and most popular tools and libraries (e.g. PyTorch, scikit-learn, NumPy).
- Learned main concepts and algorithms of Reinforcement Learning together with a large state-of-the-art literature review.
- Research experience in close contact with PhD students, professors and their didactical activities.

### Politecnico di Torino

Turin, Italy

#### Educational Collaborator

Computer Architecture (30h) - prof. Maurizio Rebaudengo

Mar. 2018 - Jun. 2018

Computer Science (50h) - prof. Elisa Ficarra

Oct. 2018 - Feb. 2019

Computer Networks (30h) - prof. Guido Marchetto

Oct. 2018 - Feb. 2019

#### My tasks were:

- Talk and discuss with students and professors about arguments regarding the course, focusing on students necessities and doubts.
- Assistance during exams.

### Feedback Italia s.r.l.

Moncalieri, Italy

#### Android Programming - Undergraduate Internship (250h)

Mar. 2017 - Jul. 2017

#### My tasks were:

- Working on the graphical and functional renovation of the leading Android project of the company (EasyMeeting) together with the head team and a group of interns (learning on the job with pair programming).
- Testing the app (e.g. requirements definitions, steps to reproduce the problem) on different devices and environments.

### SanremoBio

Sanremo, Italy

#### Graphic Designer and Webmaster - Consultant / part of a friend business

Jul. 2014 - Now

#### My tasks were:

- Understanding customer's ideas to design logos, flyers and advertising boards using Adobe Illustrator and Photoshop.
- Managing the technical part of the e-commerce website of the shop with periodic maintenance.

## Personal Experiences and Activities

### Picopod

Sanremo, Italy

#### A chord archive for passionate musicians

Jan. 2012 - Now

- **Description:** Picopod is a website implemented using Wordpress which aims to store an archive of music chords for all musicians. My brother and I created this website in our childhood to conjugate our shared passions: computer sciences and music. Nowadays, the site has an average of more than 1000 unique visitors each day.
- **Technologies:** Wordpress, HTML5, CSS5, PHP, MySQL, Javascript

## A system to count and track people position in a room using Wi-Fi devices

Apr. 2018 - Now

- **Description:** This team project aims to build up a software capable of monitoring students in a classroom and collecting information about them (total number and position) using the technologies learned during the course "System Programming". In this scenario, we exploited *probe request* messages sent by Wi-Fi devices, gathering them using a set of ESP32 boards (2 or more) to triangulate student position.
- **Technologies:** C, C++, Qt

## Pedibus

Turin, Italy

## Managing bookings and schedule of a school walking bus system

Mar. 2019 - Now

- **Description:** This team project, developed during the course "Web Applications", aims to build up a full-stack web application to manage the service of a walking bus. It provides an easy interface for parents to book everyday rides for their children with a security notification system, but also a scheduling management system for the supporting team.
- **Technologies:** Java, Spring, Typescript, Angular, Javascript, RxJS, WebSocket, REST API, Docker

## Timetabling Algorithm



Turin, Italy

## Exam Timetabling Problem Solver

Sep. 2017 - Feb. 2018

- **Description:** This team project aims to propose a solution approach for extensive Exam Timetabling Problem (ETP) by exploiting one (or more) heuristic and meta-heuristic algorithms presented during the course *Optimization Methods and Algorithms*. In our particular case, we used a variant of Simulated Annealing.
- **Technologies:** Java

## Skills

## Professional

<b>Programming Languages</b>	C, C++, Java, Python, Javascript, TypeScript, PHP, MatLab, LaTeX, Bash, Assembly x86
<b>Machine Learning Framework</b>	NumPy, PyTorch, Scikit-Learn, Matplotlib, OpenAI Gym, TensorboardX
<b>Web Applications</b>	Spring, REST API, HTML5, CSS3, Angular, Wordpress, Docker
<b>Software/IDEs</b>	CLion, PyCharm, PhpStorm, WebStorm, VisualStudio Code, Matlab, TexStudio, Android Studio
<b>Operating Systems</b>	Windows, Linux (Ubuntu), Mac OSX, Android, iOS
<b>Databases</b>	SQL, MySQL, OracleSQL, Hadoop, Spark
<b>Miscellaneous</b>	Adobe Photoshop, Adobe Illustrator, Markdown, Latex, Office Suite - ECDL Core (2011) and Advanced (2013)

I developed my computer science knowledge during my Bachelor and Master's degree, thanks to didactical projects and laboratories. An essential experience in this direction was the internship with Feedback Italia where I discovered how a typical business environment works and learned how to work proficiently in a team. The semester I spent on the thesis represents the most valuable experience for my career so far because I experienced research in an exciting and brand new field. I find myself in a very challenging but familiar environment, filled up by brilliant PhD students, professors and fresh ideas about the latest technology in computer sciences.

## Organizational and Communication

<b>Verbal and Writing</b>	Interaction with different people in professional environments, experience in report and thesis writing
<b>Management</b>	Autonomy, Flexibility, Adaptability, Planning, Achievement of objectives, Entrepreneurial spirit and initiative
<b>Personal Development</b>	Self confidence, Resistance to stress, Precision and attention to details, Learn continuously, Problem Solving
<b>Team Development</b>	Leadership, Organization of teams, Division of tasks, Planning milestones, Resolution of conflicts
<b>Licenses and Certifications</b>	Italian Driving License A1 and B (2013), FIRST Cambridge Grade C (2013)
<b>Languages</b>	Italian (Native), English (Level B2 - Comprehension, Speaking, Listening), French (Basic Knowledge)

During my adolescence, I participated with commitment in the staff team of voluntary initiatives as an educator where I gained functional moderator capabilities in the management of events with large groups of people, but also how to compare ideas and to understand different points of view. Moreover, during my professional and research experiences, I acquired communication skills through continuous contact with customers and colleagues. Furthermore, I gained a lot of soft skills such as problem-solving, time management, decision making and the ability to work under pressure. Living in "Collegio Renato Einaudi" merit residence and facing didactic team projects, enabled me to develop team management, leadership, conflict resolution, adaptability skills.

## Interests

<b>Sports</b>	Running, Cycling, Swimming, Climbing, Trekking
<b>Hobbies</b>	Playing the guitar, Explore new places and meet new people around the world to share

During my free time, I like to go trekking or organise trips in cities or countrysides together with my friends and colleagues. I think that sharing is one of the main principles that I managed to make mine during my university life thanks to the great opportunity that "Collegio Einaudi" merit residence has given to me. I love to meet different people to discover different points of view, new bits of knowledge and unusual experiences. The abroad experience in France was an opportunity to develop skills and make connections with students from around the world. I think that sharing allows people to enrich each other in every aspect of our lives, both professional and personal ones.

I authorize the processing of the personal data contained in my CV in compliance with art. 13 of D. Lgs. 196/2003 and art. 13 GDPR 679/16.