Piero **Macaluso**

MSc Computer Science Engineering Student at Politecnico di Torino

Via Galileo Galilei, 154 - Sanremo (IM) 18038 - Italy

(+39) 334-7150020 · info@pieromacaluso.com · www.pieromacaluso.com · pieromacaluso

pieromacaluso

Education

Politecnico di Torino — *Turin, Italy*

Master of Science in Computer Engineering - Software Career — Oct. 2017 - Exp. Mar. 2020

Master Thesis: Model-Free Reinforcement Learning algorithms applied to autonomous driving task with 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 — *Turin, Italy*

Bachelor in Computer Engineering (184 CFU) — 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 Experience

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, as visiting researcher student to work on the project of my master thesis. During this experience, I developed my knowledge about Reinforcement Learning, a cutting-edge branch of Machine Learning which grows from neurocognitive psychology and that is capable of improving at tasks with a process of trial and error. The research focused on model-free approaches. The thesis aims to implement a control system for a small toy robot where to exploit and compare the last-mentioned algorithms to learn 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 and 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 rewiew.
- 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 people and professors about arguments regarding the course.
- Explain the arguments of the course (laboratory and theory) 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.
- Exploring the testing app scenario (e.g. requirements definitions, steps to reproduce the problem) on different devices and environments.
- Learning on the job: pair programming to develop mobile apps.

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 graphic software (e.g. Adobe Illustrator, Photoshop)
- Managing the technical part o the e-commerce website of the shop with periodic maintenance.

Skills

PROFESSIONAL

Programming Languages	C, C++, Java, Python, Javascript, TypeScript, PHP, MatLab, LaTex, Bash, Assembly x86
Machine Learning Framework	NumPy, PyTorch, Scikit-Learn, Matplotlib, OpenAI Gym, TensorboardX
Web Applications	Spring, REST API, HTML5, CSS3, Angular, Wordpress, Docker
Software/IDEs	CLion, PyCharm, PhpStorm, WebStorm, VisualStudio Code, Matlab, TexStudio, Android Studio
Operating Systems	Windows, Linux (Ubuntu), Mac OSX, Android, iOS
Databases	SQL, MySQL, OracleSQL, Hadoop, Spark
Miscellaneous	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. However, another 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.

PERSONAL

Verbal and Writing	Interaction with different people in professional environments, experience in report and thesis writing
Management	Autonomy, Flexibility, Adaptability, Planning, Achievement of objectives, Enterpreneurial spirit and initiative
Personal Development	Self confidence, Resistance to stress, Precision and attention to details, Learn continuously, Problem Solving
Team Development	Leadership, Organization of teams, Division of tasks, Planning milestones, Resolution of conflicts
Licenses and Certifications	Italian Driving License A1 and B (2013), FIRST Cambridge Grade C (2013)
Languages	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 resident and facing didactic team projects, enabled me to develop team management, leadership, conflict resolution, adaptability skills.

Personal Experiences and Activities

Picopod
Sanremo, Italy

A Wordpress blog 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

Room Monitor
Turin, Italy

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

I hereby authorize the processing of the personal data contained in this CV in compliance with the European Regulation (UE) 2016/679.