

# STEFANO CAPPELLINI

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## Brief Description

I am a Machine Learning Engineer and a Computer Scientist. After being a Software Engineer specialized in Web Development for some years, I decided to dive into the wonderful world of Machine Learning in order to combine my computer science background with my passion for Maths, Artificial Intelligence, probability and statistic.

I am really passionate about Deep Learning, mostly applied to computer vision.

I would like to apply my skills to real world problems that matter, for example in the medicine field, in the astronomy field or in the environmental engineering.

I love building complex, smart systems and I am looking for interesting and challenging opportunities.

## Skills

### **Machine Learning:**

- Python, TensorFlow, Sklearn, Skimage, Numpy, Pandas, Scipy, Matplotlib
- Supervised, Unsupervised and Reinforcement learning. Both regression and classification tasks
- Knowledge of the most widely used learning algorithms, models, ensemble techniques and Kernels
- Theoretical background: statistical learning theory, margin maximization, bias-variance trade-off, overfitting
- Able to go through the entire Machine Learning workflow
- Knowledge of the most used regularization and validation techniques
- **Deep Learning:** knowledge of the math behind, able to build complex models from scratch using the latest research techniques, to optimize, evaluate and compare their performance and robustness.

**Artificial Intelligence:** Basic knowledge of AI and of Multi-Agent Systems

**Data Mining:** Able to go through the entire Data Mining cycle. Knowledge of Kmine.

**Research:** able to search, read, understand the relevant Literature and to write scientific documents using tools like LaTeX, BibTeX, Zotero

### **Computer Science:**

- *Typical background for a bachelor's degree in Computer Science:* good knowledge of algorithms, theory of computation, optimization, maths, probability, statistics, programming, databases, Operating Systems
- Cryptography, Information Theory, computer security
- C++ (< 1 yr), Java (5+ yrs), JavaScript (5+ yrs), Lisp (1 yr), PHP (5+ yrs), Prolog (1 yr), Python (1 yr)
- *Software Engineering:* Object Oriented Analysis/Design/Programming, Git, TDD, UML, Antipatterns, code smells, Design Patterns, refactoring, unit testing, black and white box testing, use cases
- *Web:* PHP, MySQL, JavaScript, CSS, Less, SASS, Grunt, JQuery, HTML

## Projects

- **Facial Landmark Detection: a modern approach (2017)** (<http://bit.ly/2xjFmPZ>): To solve the Facial Landmark Detection problem I built a Convolutional Neural Network model, with a conceptually simple architecture, employing some of the most recent techniques (Inception modules, residual connections, dropout, batch normalization, ELUs). The solution was relatively cheap to train, obtained really competitive computational performance and predictive performance comparable to the ones obtained by more complex, state-of-the-art models presented in the last few years.
- **SASHO (2016)** (<http://cppsfm.co/projects/sasho/>): Php + JavaScript URL shortening service: when a user clicks on a shortened link, a page is opened showing where that link is pointing to, asking for a confirmation. In addition, it uses the MyWOT API to evaluate the links safety.
- **RResize (2015)** (<http://cppsfm.co/projects/rresize/>): JQuery utility that allows to define the code to be executed when a resizing event occurs or when it is over, using throttling to speed up performance
- **MagieSort (2014)** (<http://cppsfm.co/projects/magiesort/>): Java utility that allows to explore, step by step, how various sorting algorithms work.

## Education

09/2017: Machine Learning Engineer Nanodegree - Udacity

09/2016: One year of the Computer Science Master Degree at University of Milano-Bicocca

07/2015: Bachelor of Science in Computer Science, cum laude - University of Milano-Bicocca

## Professional Experience

10/2011 - 10/2015: Full-stack Web developer freelance. I built websites for small business (e.g. PcXpress srl), nonprofit organizations (e.g. Saint Lawrence Foundations)