



# Antonio Cruciani

## *Curriculum Vitae*

### Contact Information

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**GitHub**, github.com/Antonio-Cruciani.

### Education

2020–Now **Doctor of Philosophy**, *GSSI - Gran Sasso Science Institute*, L'Aquila.  
Ph.D., Computer Science

2017–2020 **Student**, *University of Rome*, Tor Vergata, *Master's degree*.  
Computer Science.  
Final mark : 110/110 Cum Laude  
Supervisor: [Prof. Francesco Pasquale](#)  
Thesis title: Dynamic Random Graphs and unstructured P2P networks, analysis of two models inspired by the Bitcoin network.  
Available at the following [link](#)

2011–2017 **Student**, *University of Rome*, Tor Vergata, *Bachelor's degree*.  
Computer Science.  
Final mark : 92/110  
Supervisor: [Prof. Giorgio Gambosi](#).  
Thesis title: Efficient learning methods for playlist prediction.

2006–2011 **High School**, *ITIS Montani*, Fermo, .  
Qualified Industrial Technician specialization: Information and Technology

## Experience

### Research

February **Big Data and Information Retrieval**, BIG DATA ANALYTICS LAB AT FON-  
Now DAZIONE UGO BORDONI , Working on MinHash Signature Estimation Algorithms  
2020 for Diameter Estimation ([link](#)), Graph Clustering, Centrality, Ranking and delta  
encodings. .

Supervisor: [Giambattista Amati](#)

### University

September **Talk**, *10th Italian Information Retrieval Workshop (IIR-2019)*, Padua.  
2019 I presented the joint project with Fondazione Ugo Bordoni about index compression tech-  
niques.

June 2019 **Seminar**, UNIVERSITY OF ROME TOR VERGATA, Talk on FPT Algorithms.  
I held a seminar about Iterative Compression technique for NP-Hard problems on Graphs.

October 2018 **Teaching Assistant**, UNIVERSITY OF ROME TOR VERGATA, Prof. Miriam Di  
June 2019 Ianni.

Computability and Computational Complexity Theory

List of Exercises (IT) proposed by me during my lessons available at the following [link](#)

December **Teaching Assistant**, UNIVERSITY OF ROME TOR VERGATA, Prof. Gianluca  
2017 June Rossi .

2018 Computer programming with laboratory

### Work

October 2015 **Developer**, WEDOT, Roma.

January 2016 Software developer for Microsoft platforms, .Net , C# ,Windows Server.

June 2010 **Intern**, NEW SYSTEM, Falerone,Fermo,Marche.

September Web developer and sysadmin  
2010

## Publications

### Conferences and Workshops

2019 A. Cruciani, D. Pasquini, G. Amati, and P. Vocca, About Graph Index Compression  
Techniques, Proceedings of the 10th Italian Information Retrieval Workshop (IIR-  
2019), Padua, Italy, September 16-18, 2019, CEUR-WS.org/Vol-2441/paper23.pdf.

## Advanced Courses

August 2020 Max Planck Advanced Course on the Foundations of Computer Science (Market  
Design and Computational Fair Division)([link](#))

2019 Semidefinite Programming and Discrete Optimization. University of Rome: "Tor  
Vergata". Ph.D. (Computer Science, Control and Geoinformation) course held by  
. [Prof. Angelika Wiegele](#).

2019 Natural Distributed Algorithms. University of Rome: "Tor Vergata". Course held by  
[Dr. Emanuele Natale](#).

- 2019 Algorithms and computational models for large-scale data analysis. University of Rome: "La Sapienza". Ph.D. (Data Science) course held by [Silvio Lattanzi](#).

## Certifications

- 2017 [MOOC] Approximation Algorithms by École Normale Supérieure  
Massive open online course by ENS on approximation algorithm. Particularly emphasizes algorithms that can be designed using linear programming and semidefinite programming.
- 2017 Machine Learning Specialization by Washington University  
Online specialization on machine learning covering: foundations of ML, regression, classification, clustering and retrieval. To see the certification click on the name of specialization
- 2017 Machine Learning By Stanford University  
Online course on machine learning, topics: supervised learning, unsupervised learning. To see the certification click on the name of specialization
- 2017 Common European Framework (CEFR) B1

## Programming skills

Basic	OWL, SPARQL,FORTRAN,COBOL,LISP
Intermediate	GO,MATLAB,JAVASCRIPT,R,ASP.NET,JAVA
Advanced	PYTHON,C,C++,C#,SQL,PHP
Frameworks	Apache Spark

## Languages

Italian	<b>Mother tongue</b>
English	<b>Upper Intermediate</b>

I have been attending an English school, since February 2020 (My English School).  
I will take an IELTS Academic certificate as soon as the covid lockdown ends.

## Interests

- |                            |                           |
|----------------------------|---------------------------|
| - Computational Complexity | - Distributed Computing   |
| - Network Analysis         | - Spectral Graph Theory   |
| - Stochastic Processes     | - Dynamic Graphs          |
| - Algorithms               | - Algorithmic Game Theory |
| - Machine Learning         | - Information Retrieval   |
| - Property Testing         |                           |

Antonio Cruciani November 9, 2020

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