Antonio Cruciani

Curriculum Vitae

Contact Information

Email, crc.antonio.12@gmail.com.

Education

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 to the Bitcoin network.
Available at the following link

2011–2017 **Student**, *University of Rome* , Tor Vergata, *Bachelor*.
Computer Science.
Final mark : 92/110
Supervisor: Prof.Giorgio Gambosi.
Thesis title: Efficient larning methods for playlist prediction.
Description: My bachelor thesis was on Machine Learning, entitled: "Efficient learning methods for playlist prediction", in which I analyzed the performance of the *Logistic Markov Embedding* algorithm. It is an algorithm that was initially applied for the automatic playlists creation, which are considered as Markov chains located in a latent space. LME learns how to represent each song as a single point (or multiple) in the latent space. This type of approach can be extended to any kind of sequential data. In addition to the algorithm analysis, I performed empirical tests comparing the performance of the LME with the other pre-existing learning algorithms. Finally, I studied and analyzed the distributed version of the model. The main idea of this distributed algorithm is to divide the global embedding problem into local version, easier to process on multiple agents, in order to scale the complexity, quadratic in the input size, which can be considered the only weakness of this model.

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

Experience

Research

February 2020 – Now
Big Data and Information Retrieval, Big Data Analytics Lab at Fondazione Ugo Bordoni , Working on MinHash Signature Estimation Algorithms for Graph Clustering, Centrality, Ranking and *d-gap* compression .
Supervisor: Giambattista Amati

University

June 2019
Seminar, University of Rome Tor Vergata, Talk on FPT Algorithms.
I have held an advanced seminar about Iterative Compression technique for NP-Hard problems on Graphs.

October 2018 – June 2019
Teaching Assistant, University of Rome Tor Vergata, Prof. Miriam Di Ianni.
Computability and Computational Complexity Theory
List of Exercises (in Italian) proposed by me available at the following link

December 2017 – June 2018
Teaching Assistant, University of Rome Tor Vergata, Prof. Gianluca Rossi .
Computer programming with laboratory

Work

October 2015 – January 2016
Developer, WeDot, Roma.
Software developer for Microsoft platforms, .Net , C# ,Windows Server.

June 2010 – September 2010
Intern, New System, Falerone,Fermo,Marche.
Web developer and sysadmin

Publications

2019 Antonio Cruciani, Daniele Pasquini, Giambattista Amati, Paola Vocca

About Graph Index Compression Techniques

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 (Advanced)

Languages

Italian	**Mother tongue**
English	**Certification: Common European Framework (CEFR) B1**

Interests

- Computational Complexity
- Network Analysis
- Stocastic Processes
- Algorithms
- Machine Learning
- Property Testing
- Distributed Computing
- Spectral Graph Theory
- Dynamic Graphs
- Algorithmic game theory
- Information retrieval

List of courses with grades

Exam	Professor	Grade (/30)
Network Analysis	Miriam Di Ianni	30
Cooperative Systems and Social Networks	Maurizio Talamo	30L
Statistical Inference and Information Theory	Gianpaolo Scalia Tomba	30
Distributed Algorithms and Complex Networks	Andrea Clementi, Luciano Gualà, Luca Trevisan	26
Algorithms and Data Structures 2	Francesco Pasquale	I
Artificial Intelligence 2	Maria Teresa Pazienza	30L
Security of Information Systems	Andrea Dimitri	29
Information Retrieval	Gianbattista Amati	30L
Probability 2	Antonella Calzolari	28
Distributed Cooperative Systems	Franco Arcieri	29
Web Mining And Retrieval	Roberto Basili	27
Systems verification methods	Benedetto Intrigila	30
Machine Learning	Giorgio Gambosi	30
Semidefinite Programming and Discrete Optimization	Angelika Wiegele	-
Average Grade		29.26

Antonio Cruciani March 27, 2020

Antonio Cruciani