Antonio Cruciani

Curriculum Vitae

Contact Information

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dblp, dblp.org/pid/249/5159.

Education

2020–Now **Ph.D.**, *GSSI - Gran Sasso Science Institute*, L'Aquila.
Ph.D., Computer Science
Supervisors: Prof. Francesco Pasquale, Prof. Pierluigi Crescenzi

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.

Experience

Research

August-October 2024 **Visiting Ph.D. Student**, *IIT Madras*, Working on distributed algorithms for highly dynamic graphs.
Supervisor: John Augustine

August 2023-March 2024 **Visiting Ph.D. Student**, *IIT Madras*, Working on distributed algorithms for highly dynamic graphs.
Supervisor: John Augustine

February-October 2020 **Big Data and Information Retrieval**, Big Data Analytics Lab at Fondazione Ugo Bordoni , Working on graph mining algorithms for distance functions estimation (link), compression, clustering, centrality, and ranking algorithms.
Supervisor: Giambattista Amati

Teachings

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 June 2019 **Teaching Assistant**, University of Rome Tor Vergata, Prof. Miriam Di Ianni.
Computability and Computational Complexity Theory
Link to the lessons material (IT) 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-September 2010 **Intern**, New System, Falerone,Fermo,Marche.
Web developer and sysadmin

Publications

Conferences

2024 A. Cruciani, MANTRA: Temporal Betweenness Centrality Approximation through Sampling. European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases (ECML-PKDD), Vilnius September 9-13.

2023 G. Amati, A. Cruciani, D. Pasquini, P. Vocca and S. Angelini, PROPAGATE: A Seed Propagation Framework to Compute Distance-Based Metrics on Very Large Graphs. European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases (ECML-PKDD), Turin September 18-22.

2023 R. Becker, P. Crescenzi, A. Cruciani and B. Kodric, Proxying Betweenness Centrality Rankings in Temporal Networks. 21st International Symposium on Experimental Algorithms (SEA), Barcelona July 24-26.

2023 A. Cruciani, F. Pasquale, Dynamic graph models inspired by the Bitcoin network-formation process. 24th nternational Conference on Distributed Computing and Networking (ICDCN), IIT Kharagpur January 4-7.

2022 A. Cruciani, F. Pasquale, Dynamic graph models for the Bitcoin P2P network: simulation analysis for expansion and flooding time. 24th International Symposium on Stabilization, Safety, and Security of Distributed Systems (SSS), Clermont-Ferrand November 15-17. (Brief Announcement)

Workshops

2021 P. Vocca, G. Amati, S. Angelini, A. Cruciani, G. Fusco, G. Gaudino and D. Pasquini, OASIS 2021, Topic modeling by community detection algorithms

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.

Schools

March 2022 Bertinoro International Spring School 2022 (link)

September 2021 European Summer School on Learning in Games, Markets, and Online Decision Making (link)

July-August 2021 Max Planck Advanced Course on the Foundations of Computer Science (Convex Optimization)(link)

May - June 2021 Algorithmic Tools for Massive Network Analytics (link)

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

Advanced Courses

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

Programming skills

Basic OWL, SPARQL,FORTRAN,COBOL,LISP

Intermediate GO,MATLAB,JAVASCRIPT,R,ASP.NET,JAVA

Advanced PYTHON,JULIA,JAVA,C,C++,C#,SQL,PHP

Frameworks Apache Spark

Languages

Italian **Mother tongue**

English **Fluent**

Interests

- Graph Mining
- Temporal Graphs
- Random Graphs
- Evolving Graphs
- Distributed Computing
- Randomized Algorithms
- Approximation Algorithms
- Statistical Learning