Antonio Cruciani

Curriculum Vitae

▬▬▬ Contact Information

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Web Site, antonio-cruciani.github.io.

GitHub, github.com/Antonio-Cruciani.

LinkedIn, linkedin.com/in/antonio-cruciani-9b7b7083.

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

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.

Preprints

2024   A. Cruciani. Fast Estimation of Percolation Centrality.

2024   J. Augustine, A. Cruciani I.A. Gillani. Maintaining Distributed Data Structures in Dynamic Peer-to-Peer Networks.

Seminars and Presentations

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

July 2024   Computing Distance-based metrics on Very Large Graphs. University of Padua.

September 2023   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

July 2023   Proxying Betweenness Centrality Rankings in Temporal Networks. 21st International Symposium on Experimental Algorithms (SEA), Barcelona.

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

November 2022   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.

September 2019   About Graph Index Compression Techniques. Proceedings of the 10th Italian Information Retrieval Workshop (IIR-2019), Padua.

June 2019   Iterative Compression technique for NP-Hard problems on Graphs. University of Rome Tor Vergata.

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

Academic Service

Reviewer	FUN 2020,2024
Reviewer	AAMAS 2023

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