

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

October 2018 **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 **Teaching Assistant**, UNIVERSITY OF ROME TOR VERGATA, Prof. Gianluca Rossi.

2018 Computer programming with laboratory

Work

October 2015 **Developer**, WE DOT, Roma.

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

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

September 2010 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 International 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.

Preprints

- 2024 A. Cruciani. Fast Estimation of Percolation Centrality.

Seminars and Presentations

- 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 International 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