

Andrea D'Ascenzo

PhD Student

Department of Computer Science, Information Engineering
and Mathematics - University of L'Aquila

Autorizzato per la pubblicazione sul web.

GENERAL

2020-2024. PhD student on *Information and Communication Technology* at the University of L'Aquila, supervised by prof. Mattia D'Emidio.

Expected PhD graduation date: May 2024.

2020. MSc *cum laude* in Computer Science, curriculum *Networks and Data Science* - University of L'Aquila - Thesis title: *Algorithms to control RNA substructure stability in optimal protein synthesis* - Mentor: *prof. Claudio Arbib*

2018. Bachelor degree in Computer Science - University of L'Aquila - Thesis title: *Clustering intorno a stringhe centrali* - Mentor: *prof. Claudio Arbib*

RESEARCH ACTIVITY

Main research topics. Design, Analysis and Efficient Implementation of Algorithms. His work follows an Algorithm Engineering approach, combining theory and experimentation, and is mostly focused on: design of algorithms for efficient processing of massive (possibly dynamic) graphs; study of networks and systems of autonomous entities from an algorithmic perspective (including game theoretic, strategic aspects); design of mixed-integer programming formulations and their practical solution for biology-related problems.

Collaborations. During his PhD studies, Andrea D'Ascenzo collaborated with researchers from several institutions: University of L'Aquila, University of Chieti-Pescara, Gran Sasso Science Institute, IASI Antonio Ruberti - CNR, Marche Polytechnic University, and Inria Center of Université Côte d'Azur.

List of publications.

- AN INTEGER LINEAR PROGRAMMING MODEL TO OPTIMIZE CODING DNA SEQUENCES BY JOINT CONTROL OF TRANSCRIPT INDICATORS
C. Arbib, A. D'Ascenzo, F. Rossi, D. Santoni - *Journal of Computational Biology*, accepted.
- TOP-K DISTANCE QUERIES ON LARGE TIME-EVOLVING GRAPHS
A. D'Ascenzo, M. D'Emidio - *IEEE Access*, 2023.

- DIGRAPH k -COLORING GAMES: FROM THEORY TO PRACTICE
A. D’Ascenzo, M. D’Emidio, M. Flammini, G. Monaco - In *20th International Symposium on Experimental Algorithms (SEA 2022)*. Schloss Dagstuhl-Leibniz-Zentrum für Informatik.

Conferences.

- *Finding synonymous coding DNA sequences with maximum base pairing*.
C. Arbib, A. D’Ascenzo, A. Manno, F. Rossi
Extended abstract presented at the *International Symposium on Combinatorial Optimization (ISCO 2022)*.
- *Digraph k -Coloring Games: From Theory to Practice*. A. D’Ascenzo, M. D’Emidio, M. Flammini, G. Monaco
Presented at the *Symposium on Experimental Algorithms (SEA 2022)*.

VISITING

October - November 2023. Andrea D’Ascenzo has been invited by David Coudert for a research visit in the research team COATI (*Combinatorics, Optimization, and Algorithms for Telecommunications*), part of Inria centre at Université Côte d’Azur, Sophia Antipolis, France.

REVIEWER ACTIVITY

Andrea D’Ascenzo has served as a reviewer for the *International Symposium on Experimental Algorithms (SEA 2021)*, for the *International Symposium on Computing and Networking (CANDAR 2021, CANDAR 2023)*, for the *Concurrency and Computation Practice and Experience (CCPE)* special issue on CANDAR 2021, for the *ALGO specialized Symposium on Algorithmic Approaches for Transportation Modelling, Optimization, and Systems (ATMOS 2022, ATMOS 2023)*, and for the *Italian Conference on Big Data and Data Science (ITADATA 2023)*.

OTHER ACTIVITIES

Thesis co-tutor 2023. Andrea D’Ascenzo has co-tutored the thesis work of a student enrolled in the master program in Information Engineering at University of L’Aquila.

Teaching assistance 2021-2023. Seminarial activities in *Big Data Algorithms (ING-INF/05)*, *Algorithms Engineering (ING-INF/05)*, *Process and Operations Scheduling (MAT/09)*, *Optimization Models and Algorithms (MAT/09)* master-level courses, held at the University of L’Aquila.

PHD SCHOOL

2022. Hausdorff School *Computational Combinatorial Optimization* organized by William Cook and Stephan Held, at Bonn, Germany.