Gabriella Colajanni

Date of birth: 30/08/1990 | **Nationality:** Italian | **Gender:** Female | **Phone number:** (+39) 3806339619 (Mobile) |

Email address: gabriella.colajanni@unict.it | **Website:**

http://web.dmi.unict.it/corsi/lm-40/docenti/gabriella.colajanni |

Address: Viale A. Doria, 6, 9525, Catania, Italy (Work)

About me:
Research Fellow in Operations Research, University of Catania.

• WORK EXPERIENCE

01/01/2022 – CURRENT Catania, Italy
RESEARCH FELLOW UNIVERSITY OF CATANIA

The current field placement of Gabriella Colajanni is Operations Research. Her research focuses on linear and nonlinear constrained optimization models based on networks and on optimization of UAVs networks using 5G technologies. She is interested in Supply Chain Networks, Variational Inequalities, traffic and equilibrium problems, Portfolio Selection problems, Cloud Computing models, Business Management, Cybersecurity, UAVs and 5G networks.

01/09/2020 – 31/12/2021 Catania, Italy
POST-DOC RESEARCHER UNIVERSITY OF CATANIA

Supply Chain Networks Management

01/09/2019 – 31/12/2021 Catania, Italy
CONTRACT PROFESSOR UNIVERSITY OF CATANIA

Teacher of "Networks Optimization", Department of Mathematics and Computer Sciences

01/09/2019 – 31/10/2020 Enna, Italy
CONTRACT PROFESSOR KORE UNIVERSITY OF ENNA

Teacher of "Computer Science", Department of Economic and legal sciences

01/09/2018 – 31/08/2021 Enna, Italy
MATHEMATICS TEACHER I.C. SANTA CHIARA

01/09/2021 – CURRENT Enna, Italy
MATHEMATICS TEACHER I.C. NEGLIA-SAVARESE

01/09/2017 – 31/08/2018 Catania, Italy
QUALIFIED TUTOR UNIVERSITY OF CATANIA, DEPARTMENT OF PHYSICS AND ASTRONOMY

Mathematics

01/09/2017 – 31/08/2019 Catania, Italy
QUALIFIED TUTOR UNIVERSITY OF CATANIA, DEPARTMENT OF CHEMICAL SCIENCES

Mathematics

10/11/2014 – 31/01/2015 Treviso, Italy
ANALYST DELOITTE EXTENDED BUSINESS SERVICE

Managerial Consulting:
  • Training in **Microsoft Dynamics AX** implementation services.
  • Analysis and research of solutions to problems reported by customers.

28/10/2013 – 11/07/2014 Italy
INTERN EXPERT ON APPLIED MATHEMATICS PANDITTAINO

Management and logistics:
- Optimization of resource planning;
- Use of the company's ERP and CRM IT-management system.

12/2012 – 04/2014 Enna, Italy
PROFESSIONAL TRAINING TEACHER LEARNING CONNECTIONS

Teacher:
- Mathematics preparation course for university entrance tests of scientific faculties;
- Logic preparation course for university entrance tests of scientific faculties.

EDUCATION AND TRAINING

25/02/2019 Catania, Italy
PH.D. IN MATHEMATICS AND COMPUTER SCIENCE Departmet of Mathematics and Computer Science, University od Catania

Address Viale A. Doria, 6, Catania, Italy ⏐ **Thesis** Constrained Optimization Problems in Network Models

25/07/2018
COURSE OF PSYCHOLOGY OF LEARNING, DEVELOPMENT AND EDUCATION University of Catania

M-PSI/01, M-PSI/04

08/2016
2016 TEACHER COMPETITION WINNER: D.D.G. N. 106 OF 23 FEBRUARY 2016

Field of study Merit ranking A-28 Mathematics and science

22/07/2015
TEACHER QUALIFICATION University of Catania, Ministry of Education

Field of study T.F.A. A059 (mathematical, chemical, physical and natural sciences in middle school)

28/08/2014
MASTER DEGREE IN MATHEMATICS University of Catania

Final grade Cum laude ⏐ **Thesis** An optimization model for business management

21/11/2012
DEGREE IN MATHEMATICS University of Catania

Thesis Nonlinear Knapsack Problem

07/2009 Enna, Italy
SCIENTIFIC HIGH SCHOOL DIPLOMA Liceo Scientifico P. Farinato

Address Enna, Italy

LANGUAGE SKILLS

Mother tongue(s): **ITALIAN**

Other language(s): **ENGLISH**

DIGITAL SKILLS

Programming languages known: Python, C, MATLAB ⏐ Microsoft Dynamics AX ⏐ ERGDIS ⏐ R ⏐ Cabrì ⏐ Mathematical programs (Matlab, Mathematica, GeoGebra) ⏐ LateX ⏐ LINGO Optimization Software ⏐ MAPLE Programming ⏐ Very good knowledge of AMPL and CPLEX (languages for solving large-scale

optimization problems) │ X++ │ C C++c C │ Expert on Microsoft Office (Word, Excel-VBA, Power Point, etc.)

ADDITIONAL INFORMATION

COMMUNICATION AND INTERPERSONAL SKILLS

Good skills Good team spirit, ability to adapt to multicultural environments and communication skills acquired thanks to the years of service carried out for scouts with children and adults of different ages, group work carried out during studies and in work environments.

ORGANISATIONAL SKILLS

Excellent skills Able to autonomously organize the work, defining priorities and assuming responsibilities acquired in the collaboration for the realization of projects and through the various professional experiences listed above in which I have always been required to manage the various activities independently, respecting the deadlines and the objectives set. Excellent problem solving skills.

PUBLICATIONS

On the provision of services with UAVs in disaster scenarios: a two-stage stochastic approach. – 2022

Colajanni, G., Daniele, P., & Sciacca, D. Operations Research Forum (Vol. 3, No. 1, pp. 1-30).

Reagents and swab tests during the COVID-19 Pandemic: An optimized supply chain management with UAVs.
– 2022

Colajanni, G., Daniele, P., & Sciacca, D. , Operations Research Perspectives, 9, 100257.

A constrained optimization model for the provision of services in a 5G network with multi-level cybersecurity investments
– 2022

Cappello, G.M., Colajanni, G., Daniele, P., Sciacca, D. Soft Computing, 2022

Service-Chain Placement Optimization in 5G FANET-Based Network Edge – 2022

Colajanni, G., Daniele, P., Galluccio, L., Grasso, C., Schembra, G. IEEE Communications Magazine

Optimizing FANET Lifetime for 5G Softwarized Network Provisioning, IEEE Transactions on Network and Service Management
– 2022

Cappello, G.M., Colajanni, G., Daniele, P., Galluccio, L, Grasso, C., Schembra, G., Scrimali, L.

On the Provision of Services With UAVs in Disaster Scenarios: A Two-Stage Stochastic Approach – 2022

Colajanni, G., Daniele, P., Sciacca, D. Operations Research Forum, 2022, 3(1), 18

A Mathematical Network Model and a Solution Algorithm for IaaS Cloud Computing Colajanni, G., Daniele, P. Networks and Spatial Economics, 2022, 22(2), pp. 267–287
– 2022

Colajanni, G., Daniele, P. Networks and Spatial Economics, 2022, 22(2), pp. 267–287

An Operations Research–Based Teaching Unit for Grade 10: The ROAR Experience, Part I. – 2022

Colajanni, G., Gobbi, A., Picchi, M., Raffaele, A., Taranto, E. INFORMS Transactions on Education.

Fostering students' modelling and problem-solving skills through Operations Research, digital technologies, and collaborative learning.
– 2022

Taranto E., Colajanni G., Gobbi A., Picchi M., Raffaele A. Intern. J. of Math. Ed. in Sc. and Tech.

An Optimization Model for Service Requests Management in a 5G Network Architecture – 2021

Colajanni, G., Sciacca, D. AIRO Springer Series, 2021, 6, pp. 81–98

An Optimization Model for Managing Reagents and Swab Testing During the COVID-19 Pandemic – 2021

Colajanni, G., Daniele, P., Biazzo, V. AIRO Springer Series, 2021, 7, pp. 65–77

A new model for curriculum-based university course timetabling – 2021

Colajanni, G., Daniele, P. Optimization Letters, 2021, 15(5), pp. 1601–1616

An Optimization Model for a Network of Organ Transplants with Uncertain Availability. – 2021

Colajanni, G., Daniele, P., Nonlinear Analysis and Global Optimization (163-182). Springer, Cham.

A projected dynamic system associated with a cybersecurity investment model with budget constraints and fixed demands
– 2020

Colajanni, G., Daniele, P., Sciacca, D., Journal of Nonlinear and Variational Analysis, 4(1), 45–61

An Integer Programming Formulation for University Course Timetabling – 2019

Colajanni, G., AIRO Springer Series, 2019, 3, pp. 219–231

A Financial Optimization Model with Short Selling and Transfer of Securities – 2018

Colajanni, G., Daniele, P., AIRO Springer Series, 2018, 1, pp. 189–197

A Financial Model for a Multi-period Portfolio Optimization Problem with a variational formulation.
– 2018

Colajanni, G., Daniele, P. Vari. An. and Set Optim.: Dev. and Appl. in Decis. Mak., 25-43.

Cybersecurity investments with nonlinear budget constraints and conservation laws: variational equilibrium, marginal expected utilities, and Lagrange multipliers
– 2018

Colajanni, G., Daniele, P., Giuffrè, S., Nagurney, A., Intern.Trans.in Oper. Res., 25(5), 1443–1464

Nonlinear duality in banach spaces and applications to finance and elasticity – 2018

Colajanni, G., Daniele, P., Giuffrè, S., Maugeri, A. Springer Optimiz. and Its Appl., 134, 101-139

A convex optimization model for business management – 2018

Colajanni, G., Daniele, P., Journal of Convex Analysis, 2018, 25(2), pp. 487–514

A cloud computing network and an optimization algorithm for IaaS providers – 2017

Colajanni, G., Daniele, P., ACM International Conference Proceeding Series, 2017, a5

INTERNATIONAL CONFERENCES, SCHOOLS AND SEMINARS

30/08/2022 – 02/09/2022
International Conference on Optimization and Decision Science (ODS2022)

- "*Operations Research at high school: its impact on modelling skills and beyond*", E. Taranto, G. Colajanni, A. Gobbi, A. Raffaele;
- "*Teaching OR before University: the ROAR Experience (Part II)*", A. Gobbi, G. Colajanni, A. Raffaele, E. Taranto;
- "*Disaster Management with UAVs and 5G technology: a Three-Stage Stochastic network-based Optimization Model*" D. Sciacca, G. Colajanni, P. Daniele, A. Nagurney, L. Nagurney.

Florence University

29/07/2022 – 02/08/2022
19th EUROPT Workshop on Advances in Continuous Optimization and second Europt Summer School

Department of Mathematics, School of Science and Tecnology, University Nova de Lisboa

09/06/2022 – 11/06/2022
ECCO XXXV - CO 2022 Joint Conference (European Chapter on Combinatorial Optimization)

"*Optimizing VF Placement in UAVs for 5G Network and Service Provisioning*" G. Colajanni, joint work with Giorgia Maria Cappello, Patrizia Daniele, Laura Galluccio, Christian Grasso, Giovanni Schembra, Laura Scrimali

23/05/2022 – 27/05/2022
100 Years Unione Matematica Italiana

"*Constrained Optimization Models based on UAV networks with 5G technologies*", G. Colajanni, University of Padova.

16/05/2022 – 20/05/2022
International Symposium on Combinatorial Optimization (ISCO 2022)

Online Conference and Spring School

23/02/2022 – 25/02/2022
6th AIROYoung Workshop: Operation Research and Data Science in Public Services

"*A new 5G network Slicing Optimization Model with Cybersecurity levels*", G. Colajanni, G. Cappello, P. Daniele, D. Sciacca, Roma Tre University

29/09/2021 – 01/10/2021
Interdipartimental Center of Mathematics for Technology (CIMAT) days 2021

"*A stochastic network-based optimization model for 5G Coverage with UAVs*", G. Colajanni, P. Daniele, D. Sciacca, University of Catania.

14/09/2021 – 17/09/2021
International Conference on Optimization and Decision Science (ODS2021)

"*Multi-layer 5G Network Slicing with UAVs: an optimization model*", G. Colajanni, D. Sciacca, Sapienza University of Rome.

14/09/2021 – 17/09/2021
International Conference on Optimization and Decision Science (ODS2021)

"*Teaching Operations Research before University: the ROAR Experience (Part I)*", G. Colajanni, A. Gobbi, A. Raffaele, E. Taranto, I, Sapienza University of Rome.

14/07/2021 – 19/07/2021
5th International Conference on Dynamics of Disasters

"*A stochastic network-based optimization model for 5G Coverage in disaster scenarios*"**,** G. Colajanni, P. Daniele, D. Sciacca, Athens, Greece.

07/07/2021 – 09/07/2021
EUROPT 2021, the 18th international workshop on Advanced in continuous optimization

"*An Optimization model to manage UAVs in multitiered 5G network slices*", G. Colajanni, D. Sciacca, Toulouse, France.

08/02/2021 – 12/02/2021
5th AIRO Young Workshop

"*Multi-Period Optimization for COVID-19 resource allocation and swab testing*", G. Colajanni.

19/11/2020
International Conference on Optimization and Decision Science (ODS2020)

"*Network Functions Virtualization management and orchestration: an optimization approach*", G. Colajanni, Patrizia Daniele, Christian Grasso, Giovanni Schembra.

10/09/2018 – 13/09/2018
International Conference on Optimization and Decision Science (ODS2018)

"*A Financial Optimization Model with Short Selling and transfer of securities*", G. Colajanni, Taormina.

08/03/2018 – 09/03/2018
Variational Inequalities, Nash Equilibrium Problems and Applications

"*A Financial Model for a Multi-Period Portfolio Optimization Problem with a Variational Formulation*", G. Colajanni, Reggio Calabria, Italy

01/03/2018 – 02/03/2018
SECOND AIROYOUNG WORKSHOP Logistics Optimization and Applied Operational Research

"*An Optimization Model based on Networks for aMulti-Period Portfolio Selection Problem*", G. Colajanni, Cosenza (Italy).

09/10/2017 – 11/10/2017
Advanced in Mathematics for Technology (AMATH 2017),

Interdipartimental Center of Mathematics for Technology (CIMAT), Catania.

07/09/2017 – 08/09/2017
12TH SICC INTERNATIONAL TUTORIAL WORKSHOP "Topics In Nonlinear Dynamics"

Control Of Complex Networks Of Nonlinear Circuits And Systems, Catania.

02/07/2017 – 08/07/2017
Summer School on Optimization, Big Data and Applications

"*A Mathematical Network model and a solution Algorithm for Big Data on Cloud Computing*", G. Colajanni, University of Florence, Veroli;

22/03/2017 – 23/03/2017
Second International Conference on Internet of Things, Data and Cloud Computing (ICC'17)

"*A mathematical network model and a solution algorithm for IaaS Cloud Computing*"**,** G. Colajanni, Cambridge city, Churchill College. University of Cambridge, United Kingdom.

06/10/2016 – 07/10/2016
Variational Inequalities, Nash Equilibrium Problems and Applications

Catania

15/09/2016 – 17/09/2016
AMASES XL Conference

Dipartimento di Economia e Impresa dell'Università degli Studi di Catania.

20/06/2016 – 23/06/2016
GNAMPA Conference

Montecatini Terme

22/02/2016 – 25/02/2016
Training School "Dynamics Network Optimization and Applications in Civil Security",

MODCLIM (Modeling Clinic for Industrial Mathematics), Dipartimento di Matematica e Informatica, Università di Catania.

NETWORKS AND MEMBERSHIPS

Member of "Mensa – The International High IQ Society" International association that gathers people who are included in the 2% of the world population with the highest score in IQ tests (Intellectual Quotient). To pass the test, the candidate needs to achieve at least 148 points on the Cattel scale. The world population mean is included in an IQ range of 95 to 105 points

HONOURS AND AWARDS

National Register of Excellence – UMI (Italian Mathematical Union) Registered in the National Register of Excellence, in the scientific-technological field by the UMI (Italian Mathematical Union)

Angelo Marcello Anile Graduation Award 2nd place in the 2014

DRIVING LICENCE

Driving Licence: B

RECOMMENDATIONS

References are available upon request