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Salvatore Cuomo

Nationality: Italian **Date of birth:** 14/05/1975 **Phone number:** (+39) 3403994735

Phone number: (+39) 081675624 **Email address:** salvatore.cuomo@gmail.com

Home: via madonna del Pantano, 57, 80014 Giugliano (Italy)

WORK EXPERIENCE

Associate Professor

Università degli Studi di Napoli Federico II [01/10/2018 – Current]

City: Napoli | **Country:** Italy

- Professor
- Researcher
- Principal Investigator of Research projects
- Research Group Leader

Co-funder and Chief of Scientific Officer (CSO)

Quantum2pi [13/06/2024 – Current]

- Chief of Scientific Officer of an Innovative Start-Up Quantum2pi SRL

https://www.quantum2pi.com

Chief of Scientific Officer (CSO)

Spici SRL [01/11/2023 – Current]

City: Napoli | **Country:** Italy

- Head of Officina digitale division

Co-founder and CTO

Predico SRL [10/07/2019 – Current]

City: Napoli | **Country:** Italy

- Technical Manager and Founder of the Academic Spin-off Predico SRL (http://www.predico.ue)

Researcher

Unviersità degli Studi di Napoli Federico II [01/11/2001 – 01/10/2018]

City: Napoli | **Country:** Italy

High Level Teacher

Provveditorato agli Studi di Caserta [09/2000 – 01/11/2001]

City: Caserta | **Country:** Italy

- High School Teacher A042 Mathematics at secondary schools.

Research Fellow

Istituto Nazionale di Fisica Nucleare [01/11/1999 – 01/11/2001]

City: Roma | **Country:** Italy

- Researcher on High Performance Computing

Research Fellow

Istituto Nazionale di Alta Matematica [01/01/1998 – 31/01/1998]

City: Roma | **Country:** Italy

- Researcher of Applied Mathematics

EDUCATION AND TRAINING

PhD in Applied Mathematics and Computer Science.

Università degli Studi di Napoli Federico II [01/11/1999 – 20/12/2004]

City: Napoli | **Country:** Italy | **Website:** http://www.unina.it

Master Degree in Mathematics Cum Laude

Università degli Studi di Napoli Federico II [01/11/1994 – 10/10/1997]

City: Napoli | **Country:** Italy | **Website:** http://www.unina.it

LANGUAGE SKILLS

Mother tongue(s): Italian

Other language(s):

English

LISTENING C1 **READING** C1 **WRITING** C1

SPOKEN PRODUCTION C1 **SPOKEN INTERACTION** B2

Levels: A1 and A2: Basic user; B1 and B2: Independent user; C1 and C2: Proficient user

DIGITAL SKILLS

System Operating (Unix, Linux, Windows) / Team-work oriented / Computer programming (C++ Java HTML) / Organizational and planning skills / Statistical Analysis (Python Statsmodels, Scipy) / Office Automation suites (Microsoft Office, Libre Office, Open Office)

MANAGEMENT AND LEADERSHIP SKILLS

Vice President of Mathesis Nazionale and President of the Naples Section. The Italian Society of Mathematical and Physical Sciences was founded in 1895 by several secondary school teachers, including Rodolfo Bettazzi (its first president), Aurelio Lugli, and Antonio De Zolt. Its aim was to improve and enhance the teaching of mathematics in schools of all levels. It is one of the oldest scientific societies in Italy, and specifically the oldest dedicated to mathematics.

Link: https://mathesisnazionale.it/

Scientific Leader and Research Project Leader.

- He has coordinated various competitive research projects at both national and international levels;
- Collaborated with international research groups (USA, South Korea, Spain, China, Iran);
- Responsible for scientific studies and research entrusted by qualified public or private institutions;
- Associate Editor of several prestigious international journals related to Applied Mathematics and Computer Science.

For more information, please see the extended CV available at the provided link

https://www.docenti.unina.it/salvatore.cuomo

https://sites.google.com/view/salvatorecuomo/

Link: https://sites.google.com/view/salvatorecuomo/

Member of the PhD faculty board and Academic Supervisor. Academic Supervisor for:

- PhD theses
- Master's theses (Mathematics, Computer Science, Mathematical Engineering)
- Bachelor's theses (Mathematics, Computer Science, Computer Engineering)
    -

CONFERENCES AND SEMINARS

Experience in National and International Conferences.

- Participation as a speaker in over 60 presentations at international conferences.
- Organizer of workshops, seminars, and symposia.

More information on

https://www.docenti.unina.it/salvatore.cuomo
https://sites.google.com/view/salvatorecuomo/

HONOURS AND AWARDS

Awards i) Best paper award--Visitor Dynamics in a Cultural Heritage Scenario (http://www.dataconference.org/PreviousAwards.aspx?y=2016).

ii) Best paper Award--Handling Uncertainty in Clustering Art-exhibition Visiting Styles. (http://www.infoscale.org/2016/show/home)

iii) BEST PAPER AWARD - UDML@ICDM 2022 - International Conference on Data Mining, with the title: "Cut the Peaches: Image Segmentation for Utility Pattern Mining in Food Processing", 2022 IEEE International Conference on Data Mining Workshops (ICDMW) Nov. 28 2022 to Dec. 1 2022 Orlando, FL, USA ISBN: 979- 8-3503-4609-1

iv) Vincitore del FFABR 2017, Fondo per il finanziamento ordinario delle universit. statali.

v) Vincitore del Bando per l'attribuzione una tantum a professori e ricercatori universitari dell'incentivo di cui all'art. 29, comma 19 della legge n. 240/2010 per l'ANNO 2013. Per la sezione Didattica.

PUBLICATIONS

Publications in high-impact international journals. His research interests lie in the field of Applied Mathematics, specifically: i) Numerical Approximation problems (theory, practice, and applications); ii) Multivariate Data Analysis; iii) Mathematics for Artificial Intelligence. He has been involved in various research and development projects in the areas of Scientific Computing, Data Science, and the Internet of Things. He is the author of over 190 research articles in international conferences and indexed journals in the Scopus and WOS databases.

The last five relevant publications in terms of recency are listed below.

J1. Giampaolo, F., Gatta, F., Prezioso, E., Cuomo, S., Zhou, M., Fortino, G., & Piccialli, F. (2023). ENCODE-Ensemble neural combination for optimal dimensionality encoding in time-series forecasting. *Information Fusion*, *100*, 101918.

J2. Cuomo, S., De Rosa, M., Giampaolo, F., Izzo, S., & Di Cola, V. S. (2023). Solving groundwater flow equation using physics-informed neural networks. *Computers & Mathematics with Applications*, *145*, 106-123.

J3. Gatta, F., Di Cola, V. S., Giampaolo, F., Piccialli, F., & Cuomo, S. (2023). Meshless methods for American option pricing through Physics-Informed Neural Networks. *Engineering Analysis with Boundary Elements*, *151*, 68-82.

J4. Cuomo, S., Erb, W., & Santin, G. (2023). Kernel-based models for influence maximization on graphs based on Gaussian process variance minimization. *Journal of Computational and Applied Mathematics*, *423*, 114951.

J5. Cuomo, S., Di Cola, V. S., Giampaolo, F., Rozza, G., Raissi, M., & Piccialli, F. (2022). Scientific machine learning through physics–informed neural networks: Where we are and what's next. *Journal of Scientific Computing*, *92*(3), 88.

Un elenco completo delle pubblicazioni puo' essere trovato ai link riportati di seguito.

ORCID: https://orcid.org/0000-0003-4128-2588
SCOPUS: https://www.scopus.com/authid/detail.uri?authorId=14522155000
Google Scholar: https://scholar.google.it/citations?user=thoceN0AAAAJ&hl=it&oi=ao

COMMUNICATION AND INTERPERSONAL SKILLS

University Professor, Science Communicator, Expert Trainer.

- 18 years of experience teaching university courses in Mathematics, Mathematics and Statistics, Computer Science, Numerical Analysis, Scientific Computing, Programming Languages, and Parallel Programming for bachelor's and master's degrees in Mathematics, Computer Science, Engineering, and Biotechnology.

Currently, he teaches Mathematics and Statistics in the bachelor's program in Biotechnology and Numerical Methods for Data Analysis in the master's program in Mathematics.

- He has conducted numerous outreach seminars in the field of Mathematical Sciences and training courses at all levels of the Italian education system.

More information on

https://www.docenti.unina.it/salvatore.cuomo

https://sites.google.com/view/salvatorecuomo/

PROJECTS

Inventor of a Patent Prediction Method and Related System

Publication Date: 2023/10/19
Patent Office:US and EU
Application Number: 17815737

Description: A method is described for predicting a plurality of univariate and/or multivariate time series of time-varying values, implemented by a prediction system for the plurality of time series.

Link: https://patents.google.com/patent/US20230334283A1/en

MONOGRAPHS AND OUTREACH ARTICLES.

Books

OP1. Un software numerico basato su un metodo di collocazione per l'inversione della Trasformata di Laplace nel caso reale, Ph.d. Thesis in Applied Mathematics and Computer Science - XIV Ciclo- Universitá degli Studi di Napoli Federico II, Dicembre 2004.

OP2. Laboratorio di Immagini e Matrici, Fare Matematica Insieme: Istruzioni per l'uso- Liguori editore, pp. 101- 118, Vol. 21, 2013, ISBN 978-88-207-6127-1, ISSN 1972-0769.

OP3. Orizzonti Matematici un ponte tra divulgazione e didattica, pp. 216 in Memorie dell'Accademia di scienze fisiche e matematiche / Società nazionale di scienze, lettere e arti in Napoli, Giannini Editore, ISBN 978-88- 7431-857-5 (con Carlo Sbordone, Salvatore Rionero)

OP4. Esercizi di Matematica e Statistica. Richiami di teoria, quesiti e temi svolti- PARTE I, pp. 216 Nane Edizioni ISBN 978-88-96790-08-3

OP5. Esercizi di Matematica e Statistica. Richiami di teoria, quesiti e temi svolti- PARTE II, pp. 216 Nane Edizioni ISBN 978-88-96790-09-0 December 2004.

OP6. L’intelligenza artificiale nei sistemi HPC: cosa sono le Physics-Informed Neural Networks, Agenda Digitale, Dicembre 2022. (https://www.agendadigitale.eu/cultura-digitale/scientific-machine-learning-hpc-physicsinformed-neural-networks/)