

## Personal Data

## Grilli Luca



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## Position

01/07/2023 - present

## - Professore Ordinario - Full Professor (tenured)

Università di Foggia (Italia)

s.s.d 13/STAT-04 (ex SECS-S/06) - *Metodi Matematici dell'Economia e delle Scienze Attuariali e Finanziarie* / Full Professor in Mathematical Methods in Economics, Actuarial Sciences and Finance

16/06/2007– 30/06/2023

## - Professore Associato - Associate Professor (tenured)

Università di Foggia (Italia)

s.s.d SECS-S/06 - *Metodi Matematici dell'Economia e delle Scienze Attuariali e Finanziarie* / Associate Professor in Mathematical Methods in Economics, Actuarial Sciences and Finance

17/04/2001–15/06/2007

## - Ricercatore Confermato - Assistant Professor (tenured)

Università di Foggia, Foggia (Italia)

s.s.d SECS-S/06 - *Metodi Matematici dell'Economia e delle Scienze Attuariali e Finanziarie* (ex- S/04A)

## Education and training

2000–2003

## - PHD "Mathematics for Economical Analysis and Finance"

Livello 8 QEQ

Università di Napoli "Federico II", Napoli (Italia)

*Phd at Dip. Matematica e Statistica Università degli Studi di Napoli "Federico II" in "Mathematics for Economical Analysis and Finance" (XV ciclo)*

2000–2001

## Master in Economics and Finance (MEF)

Livello 8 QEQ

Università di Napoli "Federico II", Napoli (Italia)

*Master in Economics and Finance (MEF) (one year, full time) Oct. 2000 - June 2001*

1999–2000

## Research Grant

Istituto per le Applicazioni del Calcolo "Mauro Picone" Roma, Roma (Italia)

*Research Grant at CNR- IAC Istituto per le Applicazioni del Calcolo "Mauro Picone" Rome, member of the research project in Financial Mathematics in collaboration with INA-SGR for the analysis of financial markets.*

1994–1998

## Master Degree (4 years)

Livello 7 QEQ

Università degli Studi di L'Aquila, L'Aquila (Italia)

*Degree in Mathematics; "summa cum laude"; degree thesis of research in Mathematical*

Physics titled: "Derivation of Kinetic Equations from Microscopically Models"

## Summer Schools -

Giugno 2004 Gerard Summer School "Differential Games and Applications ", Hec, Montreal, Canada

28 Maggio – 15 Giugno, 2001 IV International Workshop "Foundations and Developments of Mathematical Economics ", Pozzuoli, Napoli

22 Maggio – 9 Giugno 2000 III International Workshop "Foundations and Developments of Mathematical Economics ", Pozzuoli, Napoli

17 – 23 marzo 2000 ISAM International School in Applied Mathematics The Mathematical Modelling of Financial Markets and Econophysics , Certosa di Pontignano, Siena

## PERSONAL SKILLS

Mother tongue(s) italiano

Other language(s)

|         | UNDERSTANDING |         | SPEAKING    |          | WRITING |
|---------|---------------|---------|-------------|----------|---------|
|         | LISTENING     | READING | INTERACTION | SPEAKING |         |
| English | C1            | C1      | C1          | C1       | C1      |

Communication skills

I have gained communication skills thanks to my experience in teaching at all levels (schools, CNR, Italian and foreign universities...)

Management and leadership skills

- Rector's Delegate for Information Systems and Data Flow Control (2023 - present - Rector: Lorenzo Lo Muzio).
- Rector's Delegate for Data and Information Flows (2019 - 2022 - Rector: Pierpaolo Limone).
- Scientific Director of the "Data Analytics and Artificial Intelligence Lab."
- Coordinator of the PhD program "Ambiente, sostenibilità, territori, innovazione e sicurezza - ASTIS" - XXXIX Ciclo
- Coordinator of the Short Master "Technological core Competencies and Digital Transformation (acronimo T4.0)" - Università di Foggia a.a. 2021-2022
- Director of the Short Master (Corso di Perfezionamento) "Learning Analytics" - Università Telematica degli Studi IUL and Università di Foggia a.a. 2021-2022
- Coordinator/President of the Bachelor Degree Program: Economics and Management - Department of Economics, Management and Territory - University of Foggia 2021-2024
- I handled the birth and I am the scientific director of the Mathematics and Economics Seminar (SEME), at Department of Economics, Mathematics and Statistics. It provides a calendar of seminars, at least monthly, conducted by researchers from various universities;
- Dean delegate of the Faculty/Department of Economics for the disability services.
- Coordinator of the Bachelor Degree in Economics 2016-2020
- I am the maintainer and scientific director of the RePEc archive for the Department of Economics, Mathematics and Statistics, and for the Department of Economics of Università degli Studi di Foggia.
- As a member of the board of Library, among other things, I contributed in the membership to the consortium CASPUR and CIBER for consultation on-line journals;
- I participated in the design and implementation of the "Laboratory for Quantitative Analysis of Data" at the Department of Economics, Mathematics and Statistics;
- I handled the birth and the design of the website of the Department of Economics, Mathematics and Statistics.

Professional Skills

Research Areas:

- Game Theory and Applications
- Finance
- Neural Networks and Applications
- Time-Series Models
- Behavioral Finance
- Sustainability
- Multicriteria Decision Making
- Differential Geometry
- Health Economics
- Learning Analytics
- Artificial Intelligence and applications in Economics, Finance and Health

### **Conferences:**

- September 05-07, **2024 AMASES Annual Conference**, Ischia, Napoli (IT). Title of the talk: EvoFolio: a portfolio optimization method based on multi-objective evolutionary algorithms. At the same conference, Finalist at AMASES AWARD: Optimal multivariate mixture: a genetic algorithm approach (Speaker Giacinto Angelo Sgarro). At the same conference, Title of the talk: Predicting commodity prices: an innovative approach using artificial intelligence (Speaker Antonio Vairo); At the same conference, Title of the talk (Finalist at BEST PHD AWARD): ALBERTino for stock price prediction: a Gibbs sampling (Speaker D. Santoro). At the same conference, Title of the talk: A new methodology to support wind investment decision: a combination of Natural Language (Speaker Antonio di Bari)
- April 4-6, 2024 **"11th MAF2024"** - University of Le Havre Normandie - La Havre Cedex (FR) - Ibrid. Title of the talk (online): "A combination of NLP and Monte Carlo technique to improve wind investment decisions" (speaker D. Santoro).
- February 12-14, 2024, **9th Workshop Energy Finance Italia (EFI9)**, Bari (IT), Title of the talk "A Transformer-based model for time-series: wind power and speed prediction with Informer" (speaker D. Santoro); Title of the talk: "Analysis and Prediction of Agricultural Commodity Prices: Challenges, Approaches, and Applications of Neural Networks" (Speaker G.A. Sgarro); Title of the talk "Predicting Commodity Prices: An Innovative Approach Using Artificial Intelligence" (speaker A. Vario).
- November 21-22, 2023 **6th International Conference on Mathematics and Related Sciences (ICMRS 2023)**, online with the sponsorship of Düzce University-Turkey, Turkey. **Keynote Speaker:** Prof. Dr. Luca GRILLI "On the efficacy of 'herd behavior' in the commodities market. A neuro-fuzzy agent 'herding' on deep learning traders".
- October 17-20, 2023 **DySES (Dynamics of Socio Economic Systems) 2023**, Almeria (ES). Title of the talk: On the efficacy of 'herd behavior' in the commodities market. A neuro-fuzzy agent 'herding' on deep learning traders. At the same conference, Title of the talk: Ant Colony Optimization for Chinese Postman Problem (Speaker A.G. Sgarro). Title of the talk, **BEST PAPER AWARD:** ALBERTino for stock price prediction: a Gibbs sampling approach (Speaker D. Santoro).
- September 20-22, 2023 **AMASES Annual Conference**, Milano-Bicocca (IT). Title of the talk: On the efficacy of 'herd behavior' in the commodities market. A neuro-fuzzy agent 'herding' on deep learning traders. At the same conference, Title of the talk: Ant Colony Optimization for Chinese Postman Problem (Speaker A.G. Sgarro). Title of the talk, Finalist at AMASES AWARD: Generative Adversarial Network to evaluate quantity of information in financial markets (Speaker D. Santoro).
- April, 18-19, 2023 - **SOFT COMPUTING AND DECISIONS DAYS**, Benevento, (IT), Title of the talk: Evaluating automated traders in cryptocurrencies bubbles and commodities market. A neuro-fuzzy agent 'herding' on deep learning traders: to learn or not to learn?
- November 30 2023 **IV Congresso della Federazione Italiana Mathesis**, Napoli (IT). Title of the talk: Intelligenza Artificiale e applicazioni.

- September 21-23 2022 **HELMeTO 4th International Conference on Higher Education Learning Methodologies and Technologies Online**, Palermo (IT). Title of the talk: On cooperative learning and peer tutoring. A decision support system for students' group formation.
- September 22-24, 2022 **AMASES Annual Conference**, Palermo (IT). Title of the talk: To learn or not to learn? Evaluating autonomous, adaptive, automated traders in cryptocurrencies financial bubbles
- October 22-24, 2021, **4rd International Conference on Mathematical and Related Sciences: Current Trends and Developments (ICMRS 2021)**, Antalya (turned into a virtual conference), Turkey (Invited Keynote Speaker). Title of the talk: Machine-Deep Learning and Finance: a review of recent results.
- June 08-11, 2021 **CHAOS 2021** - International Conference on Non-Linear Analysis and Modeling: Theory and Applications, Athens, Greece (speaker, turned into a virtual conference). Title of the talk: Deterministic vs Stochastic Behavior in Bitcoin Dynamics: evidence from Poincaré Recurrence Theorem
- January 21-22, 2021 **Enhanced Learning Environments for Blended Education (teleXbe)**, Foggia (turned into a virtual conference), Italy (speaker). Title of the talk: Deep learning for knowledge tracing in learning analytics: an overview
- November 20-22, 2020, **3rd International Conference on Mathematical and Related Sciences: Current Trends and Developments (ICMRS 2020)**, Antalya (turned into a virtual conference), Turkey (speaker). Title of the talk: Generative Adversarial Network for Market Hourly Discrimination
- June 09-12, 2020, **CHAOS2020**, International Conference on Non-Linear Analysis and Modeling: Theory and Applications, Firenze (turned into a virtual conference), Italy (speaker). Title of talk: A Statistical Ensemble Based Approach for Entropy in Cryptocurrencies Markets
- September 09-11, 2019, **AMASES 2019**, Perugia, Italy (speaker). Title of the talk: Optimal selection and environmental sustainability of innovative storage conditions and packaging technologies in cheesecake production
- June, 23-26, 2019, **EURO 2019**, Dublin, Ireland (speaker). Title of the talk: A Dynamic Private Property Resource Game with Asymmetric Firms
- September, 13-15, 2018, **AMASES 2018**, Napoli, Italy (speaker). Title of the talk: Quality competition in healthcare services with regional regulators: A differential game approach
- June 27-29, 2018, **International Conference on Mathematics and Mathematics Education (ICMME-2018)**, Keynote Speaker (<http://theicmme.org>), Ordu, Turkey, (additional Talk: Speaker S. Gür). Title of the talk: A Dynamic Private Property Resource Game with Asymmetric Firms
- September 14-16, 2017, **AMASES 2017**, Cagliari, Italy (speaker). Title of the talk: Regional regulators in healthcare service under quality competition: A game theoretical model
- July 4-7, 2017 **SING13**, Spain-Italy-Netherlands Meeting on Game Theory, Paris, France (speaker). Title of the talk: Quality competition in healthcare services based on regional Diagnosis Related Group (DRG) mechanism
- October 11-12, 2016, **Workshop PRIN: Long Life High Sustainability**, Foggia, Italy (speaker). Title of the talk: Topsis Model in Fuzzy Contest: a case study
- September 15-17, 2016, **XL AMASES**, Catania, Italy (speaker). Title of the talk: Innovations in the Olive Oil Sector: a Fuzzy Multicriteria Approach
- July 12-15, 2016, **17th International Symposium on Dynamic Games and Applications**, Urbino, Italy (speaker). Title of the talk: A Duopoly Model with Common Renewable Public Resource and Incentives in Finite Time Horizon. Session Dynamic Games in Economics and Finance II. Chair: Luca Grilli
- October 21-23, 2015, **Agorà-SLIM2015 - PRIN2012** session, Monza, Italy (speaker). WP3 -Foggia, Task 3.2: Set up of new models of Multicriteria Methodologies for decision aiding.

Title of the talk: MODELLO TOPSIS IN CONTESTO FUZZY

- April, 10-12, 2012 **MAF2012, Mathematical and Statistical Methods for Actuarial Sciences and Finance**, Venice, Italia (speaker). Title of the talk: "Methodological proposals for a qualitative evaluation of Italian durum wheat varieties"
- July, 08, 2011 **"Lo sviluppo del mercato energetico in Puglia: energie rinnovabili ed implicazioni economico-finanziarie"**, Evento finanziato da Bando competitivo Fondazione Cassa di risparmio di Puglia, Italy (speaker). Title of the talk: Analisi Tecnico/Finanziaria del Quarto Conto Energia per il Fotovoltaico in Italia
- July 07-09, 2010 **SING6**, Spain-Italy-Netherlands Meeting on Game Theory, Palermo, Italy (speaker). Title of the talk: A Game Theoretical Study of the Wheat Market in South Italy
- June, 28-30, 2010 **GTM2010, THE FOURTH INTERNATIONAL CONFERENCE on GAME THEORY AND MANAGEMENT**, Saint Petersburg, Russia (speaker). Title of the talk: A Game Theoretical Study of the Wheat Market in South Italy. Session: Game Theory and Marketing - Chair – Luca Grilli
- April, 07-09, 2010; **MAF2010, Mathematical and Statistical Methods for Actuarial Sciences and Finance**, Ravello (SA), Italia (speaker). Title of the talk: A Cluster Analysis of the Italian Electricity Day-Ahead-Market
- September, 25-27, 2008, **MDEF2008, Fifth Workshop "Modelli Dinamici in Economia e Finanza"**, Urbino, Italia (speaker - Session Chair). Title of the talk: "Electricity Market and Auctions: the Italian case"
- September, 18-19, 2008, **MTISD2008, Metodi, Modelli e Tecnologie dell'Informazione a Supporto delle Decisioni**, Lecce, Italia (speaker). Title of the talk: Quali-Quantitative Indicators for Decision Making in University Activities Evaluation
- June 26-28, 2008, **SING4**, Spain-Italy-Netherlands Meeting on Game Theory, Wroclaw, Poland (speaker). Title of the talk: Electricity Market and Auction Theory: The Italian Case
- March, 26-28, 2008; **MAF2008, Mathematical and Statistical Methods for Actuarial Sciences and Finance**, Venice, Italia (speaker). Title of the talk: Financial Time Series and Neural Networks in a Minority Game Context
- January 9-10, 2008 **International Conference on Modeling, Computation** (invited speaker) and Optimization, Indian Statistical Institute, Delhi Centre <http://www.isid.ac.in/~icmco08/>: Title of the talk: A Stackelberg differential game with overlapping generations for the management of a renewable resource
- October 11-13, 2006, **MAF2006, Mathematical and Statistical Methods for Actuarial Sciences and Finance**, Salerno, Italy (speaker). Title of the talk: DECISION MAKING IN FINANCIAL MARKETS BY MEANS OF A MULTIVARIATE ORDERING PROCEDURE
- September 28-30, 2006, **MTISD2006, Methods, Models and Information Technologies for Decision Support Systems**, Procida, Italy (speaker). Title of the talk: Multivariate Ordering for decision Making: the Case of EU Financial supports to Agriculture
- September 21-23, 2006 **MDEF2006, Modelli dinamici in economia e finanza**, Urbino, Italy (speaker). Title of the talk: Minority games and financial markets
- June 14-17, 2006 **II Spain Italy Netherlands Meeting on Game Theory (SING 2)**, Foggia, Italy (organizer).
- June 24-26, 2005 **I Spain Italy Netherlands Meeting on Game Theory (SING 1)**, Maastricht, Netherlands (speaker). Title of the talk: A Neural Networks approach to Minority Game
- March, 17, 2005 **II Incontro dei giovani ricercatori delle Università pugliesi sul tema "Metodi Matematici per l'Economia e la Finanza"**, Lecce (speaker).
- July 12-14, 2004 **VI Spanish Meeting on Game Theory and Practice**, Elche, Spain (speaker). Title of the talk: A Stackelberg differential game with overlapping generations. Session: Differential Games. Chair: Luca Grilli
- March, 14-19, 2004 **I International Andean Conference and III Colombian Congress on**

Operation Research - CCIO 2004 - Cartagena de Indias, Colombia (speaker). Title of the talk: A DIFFERENTIAL GAME FOR RENEWABLE RESOURCE EXTRACTION WITH ASYMMETRIC PLAYERS AND ASYNCHRONOUS HORIZONS

- February 6, 2004 I Incontro dei giovani ricercatori delle Università pugliesi sul tema **"Metodi Matematici per l'Economia e la Finanza"**, Foggia (speaker).
- July 9-12, 2003 **XV IMGT**A, Urbino (speaker). Title of the talk: Resource extraction activity: an intergenerational approach with asymmetric players.

## **Publications**

- Di Bari, A., Grilli, L., Santoro, D., Villani, G. (2024). **A Combination of NLP and Monte Carlo Technique to Improve Wind Investment Decisions**. In: Corazza, M., Gannon, F., Legros, F., Pizzi, C., Touzé, V. (eds) Mathematical and Statistical Methods for Actuarial Sciences and Finance. MAF 2024. Springer, Cham.

[https://doi.org/10.1007/978-3-031-64273-9\\_20](https://doi.org/10.1007/978-3-031-64273-9_20)

- Canlı, D.; Senyurt, S.; Ertem Kaya, F.; Grilli, L. **The Pedal Curves Generated by Alternative Frame Vectors and Their Smarandache Curves**. Symmetry (2024), 16, 1012.

<https://doi.org/10.3390/sym16081012>

- Giacinto Angelo Sgarro, Luca Grilli, Domenico Santoro, **"Ant Colony Optimization for solving Directed Chinese Postman Problem"** Neural Comput & Applic (2024).

<https://doi.org/10.1007/s00521-024-10052-1>.

- Giacinto Angelo Sgarro, Luca Grilli, Domenico Santoro, **Optimal multivariate mixture: a genetic algorithm approach**. Annals of Operations Research (2024).

<https://doi.org/10.1007/s10479-024-06045-x>

- Alfonso Guarino, Domenico Santoro, Luca Grilli, Mario Balbi, **EvoFolio: a portfolio optimization method based on multi-objective evolutionary algorithms**. Neural Comput & Applic (2024). <https://doi.org/10.1007/s00521-024-09456-w>

- Sgarro Giacinto Angelo, Luca Grilli, **Ant Colony Optimization for Chinese Postman Problem**. Neural Computing and Applications 36(6), (2024), pp. 2901-2920.

<https://doi.org/10.1007/s00521-023-09195-4>.

- Giulio Mario Cappelletti, Rossana Caputo, Michela Cariglia, Luca Grilli, Carlo Russo, Domenico Santoro, Giacinto Angelo Sgarro **Harnessing the power of blockchain in the agri-food sector: a meta-analysis of current research and best practices**, Applied Mathematical Sciences, Vol. 17, 2023, no. 10, 477-501,

<https://doi.org/10.12988/ams.2023.917473>

- Sgarro Giacinto Angelo, Luca Grilli, Anna Antonia Valenzano, Fiorenzo Moscatelli, Domenico Monacis, Giusi Toto, Antonella De Maria, Giovanni Messina, and Rita Polito **The Role of BIA Analysis in Osteoporosis Risk Development: Hierarchical Clustering Approach**.

Diagnostics 2023 (Section Machine Learning and Artificial Intelligence in Diagnostics), 13, 2292. <https://doi.org/10.3390/diagnostics13132292>

- Alfonso Guarino, Luca Grilli, Domenico Santoro, Francesco Messina, Rocco Zaccagnino **On the efficacy of 'herd behavior' in the commodities market. A neuro-fuzzy agent 'herding'**

**on deep learning traders**, Applied Stochastic Models in Business and Industry, in press (2023) <https://doi.org/10.1002/ASMB.2793>.

- Emiliano del Gobbo, Alfonso Guarino, Barbara Cafarelli, Luca Grilli **GradeAid: a framework for automatic short answers grading in educational contexts—design, implementation and evaluation**, Knowledge and Information Systems (2023). <https://doi.org/10.1007/s10115-023-01892-9>.

- Emiliano del Gobbo, Alfonso Guarino, Barbara Cafarelli, Luca Grilli, Pierpaolo Limone, **Automatic evaluation of open-ended questions for online learning. A systematic mapping**, Studies in Educational Evaluation, Volume 77, 2023, 101258, ISSN 0191-491X, <https://doi.org/10.1016/j.stueduc.2023.101258>.

- Cappelletti, Giulio Mario, Luca Grilli, Carlo Russo, and Domenico Santoro **"Benchmarking Sustainable Mobility in Higher Education"** Sustainability 15, no. 6: 5190. 2023. <https://doi.org/10.3390/su15065190>

- Giacinto Angelo Sgarro, Luca Grilli **Genetic algorithm for optimal multivariate mixture**, Applied Mathematical Sciences, Vol. 17, 2023, no. 1, 15-25. <https://doi.org/10.12988/ams.2023.917307>

- Gür Mazlum, Sümeyye, Süleyman Şenyurt, and Luca Grilli **"The Invariants of Dual Parallel Equidistant Ruled Surfaces"** Symmetry, 15, no. 1: 206, 2023. <https://doi.org/10.3390/sym15010206>

- Luca Grilli and Domenico Santoro. 2022. **"Forecasting Financial Time Series with Boltzmann Entropy through Neural Networks"** Computational Management Science (Classe A - Area 13 - tutti i settori concorsuali), 19, pages 665–681 (2022) <https://doi.org/10.1007/s10287-022-00430-2>

- Cappelletti, Giulio Mario, Luca Grilli, Carlo Russo, and Domenico Santoro. 2022. **"Machine Learning and Sustainable Mobility: The Case of the University of Foggia (Italy)"** Applied Sciences 12, no. 17: 8774. <https://doi.org/10.3390/app12178774>

- Francesco Colasanto, Luca Grilli, Domenico Santoro **Directional derivatives in non-Hausdorff TVS: topological filter techniques without metric structures**, Applied Mathematical Sciences, Vol. 16, 2022, no. 5, 251 - 260, <https://doi.org/10.12988/ams.2022.916795>

- Gür Mazlum, Sümeyye, Süleyman Şenyurt, and Luca Grilli. **The Dual Expression of Parallel Equidistant Ruled Surfaces in Euclidean 3-Space**, Symmetry 14, no. 5: 1062, 2022. <https://doi.org/10.3390/sym14051062>

- Luca Grilli, Domenico Santoro, **Generative Adversarial Network to evaluate quantity of information in financial markets**, Neural Computing and Applications, 34(20), pp. 17473-17490, (2022). <https://doi.org/10.1007/s00521-022-07401-3>.

- Luca Grilli, Domenico Santoro, Francesco Colasanto, Giovanni Villani **BERT's sentiment score for portfolio optimization: a fine-tuned views in Black and Litterman model**, Neural Computing and Applications, 34(20), pp. 17507-17521, (2022). <https://doi.org/10.1007/s00521-022-07403-1>.

- Francesco Colasanto, Luca Grilli, Domenico Santoro, Giovanni Villani, **AIBERTino for stock**

**price prediction: a Gibbs sampling approach**, Information Sciences, Volume 597, 2022, Pages 341-357, ISSN 0020-0255, <https://doi.org/10.1016/j.ins.2022.03.051>.

- M. Bisceglia, R. Cellini, L. Grilli "On the Dynamic Optimality of Yardstick Regulation", Annals of Operations Research, 315(1), pp. 73-92 (2022).  
<https://doi.org/10.1007/s10479-022-04671-x>

-Gabriella Casalino, Luca Grilli, Alfonso Guarino, Daniele Schicchi, Davide Taibi (2022). **Intelligent Knowledge Understanding from Students Questionnaires: A Case Study**. In: Casalino G. et al. (eds), Higher Education Learning Methodologies and Technologies Online. HELMeTO 2021. Communications in Computer and Information Science, vol 1542. Springer, Switzerland. [https://doi.org/10.1007/978-3-030-96060-5\\_6](https://doi.org/10.1007/978-3-030-96060-5_6)

- Luca Grilli, Domenico Santoro **"A Statistical Ensemble Based Approach for Entropy in Cryptocurrencies Markets"** Chaotic Modeling and Simulation, April 2021 Issue 2: pp. 91-103, 2021

- Casalino, Gabriella; Grilli, Luca; Schicchi, Daniele; Taibi, Davide **"Intelligent Knowledge understanding from students questionnaires"** Book of Abstracts HELMeTO 2021 3rd International Workshop on Higher Education Learning Methodologies and Technologies, 2021, Ed. by Marta Cimitile and Riccardo Pecori, pp. 66-68, ISBN: 978-88-99978-36-5

- Giulio Maria Cappelletti, Luca Grilli, Carlo Russo, Domenico Santoro **"Sustainable mobility in universities: the case of the University of Foggia (Italy)"** Environments, 2021, 8, 57.  
<https://doi.org/10.3390/environments8060057>

- Luca Grilli, Domenico Santoro **"Cryptocurrencies Markets and Entropy: A Statistical Ensemble Based Approach"** Applied Mathematical Sciences, Vol. 15, 2021, no. 7, 297-320 (<https://doi.org/10.12988/ams.2021.914488>)

- Luca Grilli, Gabriella Casalino, Pierpaolo Limone, Domenico Santoro, Daniele Schicchi **"Deep learning for knowledge tracing in learning analytics: an overview"**, Proceedings of the First Workshop on Technology Enhanced Learning Environments for Blended Education - The Italian e-Learning Conference 2021, In CEUR WORKSHOP PROCEEDINGS - ISSN:1613-0073, 2021, vol. 2817 (ONLINE: <http://ceur-ws.org/Vol-2817/>)

- Luca Grilli, Domenico Santoro **"Generative Adversarial Network for Market Hourly Discrimination"**, Proceedings Book of ICMRS 2020 - 3RD INTERNATIONAL CONFERENCE ON MATHEMATICAL AND RELATED SCIENCES: CURRENT TRENDS AND DEVELOPMENTS, Editors ERHAN SET, AHMET OCAK AKDEMİR, ALPER EKİNCİ, 2021, ISBN: 978-625-409-146-9, pp. 106-113, <http://www.ic-mrs.org/files/proceedings.pdf>.

- Luca Grilli, Domenico Santoro **"A Statistical Ensemble Based Approach for Entropy in Cryptocurrencies Markets"**, CHAOS 2020 Proceedings 13th Chaotic Modeling and Simulation International Conference, edited by Christos H. Skiadas, 2020, pp. 265-277, [http://www.cmsim.org/images/CHAOS\\_Proceedings-2020\\_A-Gr-1-278.pdf](http://www.cmsim.org/images/CHAOS_Proceedings-2020_A-Gr-1-278.pdf).

- Luca Grilli, Michele Gutierrez, Lucia Maddalena, Antonio Piga **"Optimal selection and environmental sustainability of innovative storage conditions and packaging technologies in cheesecake production"**, Applied Mathematical Sciences, Vol. 14, 2020, no. 6, 245-270, <https://doi.org/10.12988/ams.2020.912179>

- Suleyman Senyurt, Sumeyye Gur Mazlum, Luca Grilli **"Gaussian curvatures of parallel ruled surfaces"**, Applied Mathematical Sciences, Vol. 14, 2020, no. 4, 171-183, <https://doi.org/10.12988/ams.2020.912175>

- M. Bisceglia, L. Grilli, "A Dynamic Private Property Resource Game with Asymmetric Firms", Decisions in Economics and Finance, 43, 109-127 (2020).  
<https://doi.org/10.1007/s10203-019-00266-7>

- M. Bisceglia, R. Cellini, L. Grilli **"Quality competition in healthcare services with**

- regional regulators: A differential game approach**", Dynamic Games and Applications, Vol. 9, Issue 1, pp. 1-23 (2019), <https://doi.org/10.1007/s13235-018-0245-y>
- L. Grilli, M. A. Russo, **"The Management of Human Resources in Health Industries: A Multicriteria Approach"**, Journal of Applied Economic Sciences, Vol. XIII, Issue 7 (61), Winter 2018, pp. 1972-1974
  - M. Bisceglia, A. G. Caputi, L. Grilli, V. Pacelli **"Internal Balance and International Competitiveness: Sports Leagues Decision Models"**, Italian Economic Journal, November 2018, Volume 4, Issue 3, pp 567-578, <https://doi.org/10.1007/s40797-018-0079-1>
  - M. Bisceglia, R. Cellini, L. Grilli **"Regional regulators in healthcare service under quality competition: A game theoretical model"**, Health Economics, Volume 27, Issue 11, November 2018, Pages 1821-1842; <https://doi.org/10.1002/hec.3805>
  - L. Grilli, F. La Manna, V. Pacelli **"Financial markets, shocks and Omori-Utsu law"**, Journal of Applied Economic Sciences, Vol. XIII, Issue 1 (55), Spring 2018, pp. 24-33
  - L. Grilli, M. A. Russo, **"Optimal Allocation of Human Resources in the Emergency Ambulance Service"**, Applied Mathematical Sciences, Vol. 11, 2017, no. 63, 3121 - 3128, <https://doi.org/10.12988/ams.2017.712353>.
  - M. Bisceglia, L. Grilli, **"A Differential Game in a Duopoly with Instantaneous Incentives"**, Decisions in Economics and Finance, Vol. 40, Issue 1-2, pp. 317-333 (2017), (<https://doi.org/10.1007/s10203-017-0189-5>)
  - G. M. Cappelletti; L. Grilli, G. M. Nicoletti, C. Russo **"Innovations in the Olive Oil Sector: a Fuzzy Multicriteria Approach"**, Journal of Cleaner Production, 159, 2017, pp. 95-105 (<https://doi.org/10.1016/j.jclepro.2017.05.039>)
  - M. Bisceglia, L. Grilli, **"A Duopoly with Common Renewable Resource and Incentives"**, International Game Theory Review, Vol. 19, No. 4 (2017), 1750018 (20 pages), <https://doi.org/10.1142/S0219198917500189>.
  - L. Grilli, S. Şenyurt **"Spherical Indicatrix Curves of Spatial Quaternionic Curves"**, Applied Mathematical Sciences, Vol. 9, 2015, no. 90, 4469-4477, (<http://dx.doi.org/10.12988/ams.2015.53279>).
  - L. Grilli, A. Sfrecola **"A Qualitative Interpretation of the Sampling Theorem in the Time Domain"** Global Journal of Pure and Applied Mathematics, Vol. 10, Number 6, 2014, pp. 917-928.
  - L. Grilli, A. Sfrecola **"Financial/Technical Analysis about Italian "IV Conto Energia" for Photovoltaic Energy: a Case Study"**, Journal of Applied Economic Sciences, Vol. VIII, Issue 1 (23), spring 2013, pp. 44-51.
  - L. Grilli **"A Critical Review on Strong Interpolation Theorem for Way Below Relation"** Advances in Algebra, Vol. 5, Number 1, pp. 1-5, 2012.
  - L. Grilli, R. Cardillo **"Mathematics and evolution of human history: a cross-disciplinary approach"** International Journal of Mathematical Education, Vol. 2, Number 1, pp. 7-22, 2012.
  - L. Grilli, M. A. Russo, R. Gismondi **"Methodological Proposals for a Qualitative Evaluation of Italian Durum Wheat Varieties"**, Journal of Applied Economic Sciences, Vol. 7, Issue 2 (20), summer 2012, pp. 103-122
  - L. Grilli, M. A. Russo, A. Sfrecola **"Quali-Quantitative Indicators for Decision Making in University Activities Evaluation"** Journal of Applied Sciences, Volume 11, Number 4, pp. 713-718, 2011.
  - L. Grilli, M. A. Russo, A. Sfrecola **"A Cluster Analysis of the Italian Electricity Day-Ahead-Market"** International Journal of Statistics and Economics, formerly known as the "Bulletin of Statistics & Economics", Volume 7, Number A11, pp. 1-9, 2011.
  - L. Grilli, M. A. Russo, A. Sfrecola **"Financial Time Series and Neural Networks in a Minority Game Context"**, in Mathematical and Statistical Methods for Actuarial Sciences and Finance, Corazza, Marco; Claudio, Pizzi (Eds.), ISBN: 978-88-470-1480-0, Springer, 2010 ([https://doi.org/10.1007/978-88-470-1481-7\\_16](https://doi.org/10.1007/978-88-470-1481-7_16))
  - L. Grilli, P. M. Falcone **"Quantitative Analysis of the Fishing Activity in the Gulf of Manfredonia (Gargano, South-Italy)"** Journal of Environmental Protection, Vol.1, n.2, pp.117-120, June 2010.
  - L. Grilli, **"Deregulated Electricity Market and Auctions: the Italian case"** iBusiness, Volume 2, Number 3, pp. 238-242, Sep. 2010.
  - L. Grilli, A. Sfrecola **"A Game Theoretical Study of the Wheat Market in Southern-Italy"** International Journal of Computational and Applied Mathematics, Volume 5,

Number 6 (2010), pp. 763–768.

- L. Grilli, A. Sfrecola **"A Neural Networks approach to Minority Game"** Neural Computing and Applications, Vol. 18, n. 2, pp. 109-113, Feb. 2009, (<https://doi.org/10.1007/s00521-007-0163-1>).
- L. Grilli **"A Stackelberg differential game with overlapping generations for the management of a renewable resource"** Statistical Science and Interdisciplinary Research - Vol. 6, pp. 221-235, April 2009 ([https://doi.org/10.1142/9789814273510\\_0014](https://doi.org/10.1142/9789814273510_0014))
- L. Grilli **"Resource extraction activity: an intergenerational approach with asymmetric players"** Game Theory and Applications, vol.13, pp. 45-55, 2008, New York: Nova Science Publishers, ISBN: 978-1-60456-297-2.
- L. Grilli, M.A. Russo **"Decision Making in Financial Markets by Means of a Multivariate Ordering Procedure"** in Mathematical and Statistical Methods for Insurance and Finance, Perna, Cira; Sibillo, Marilena (Eds.), ISBN: 978-88-470-0703-1, Springer, 2008, ([https://doi.org/10.1007/978-88-470-0704-8\\_18](https://doi.org/10.1007/978-88-470-0704-8_18)).
- L. Grilli, M.A. Russo **"L'ordinamento dei dati multivariati in problemi di scelta: il caso degli incentivi dalla PAC"** in Metodi, Modelli, e Tecnologie dell'Informazione a Supporto delle Decisioni, parte seconda: Applicazioni, eds A. Di Maio, M.Gallo, B.Simonetti, ISBN 978-88- 464-8381-2, 2008.
- L. Grilli, M. A. Russo, A. Sfrecola **"Indicatori Quali-Quantitativi per il Supporto alle Decisioni nella Valutazione delle Attività Universitarie"**, Methods, Models and Information Technologies for Decision Support Systems (ISBN 978-88-8305-061-9), Univ. del Salento, pp. 253-256, 2008.
- F. Ciardiello, L. Grilli **"Un approccio econofisico alla distribuzione della ricchezza"**, Econofisica, Metodi per l'Economia (a cura di Decio Cocolicchio, Luca Grilli e Lucia Maddalena), Collana Interdipartimentale di Studi Economici, vol.11, pp. 49-62, 2006 (isbn: 88-495-1325-9), Edizioni Scientifiche Italiane, Napoli.
- L. Grilli **"Un approccio metrico per lo studio dei dati finanziari"**, Metodi Matematici per l'Economia e la Finanza (a cura di Lucia Maddalena), Collana Interdipartimentale di Studi Economici, Volume 4, 2005 ( ISBN: 88-495-1012-8), Edizioni Scientifiche Italiane, Napoli.
- L. Grilli **"Long-Term Fixed-Income Market Structure"** Physica A: Statistical Mechanics and its Applications, 332, 1 (feb. 2004), pp.441-447, (<https://doi.org/10.1016/j.physa.2003.10.019>).
- L. Grilli **"Boltzmann-type equation in anelastic case: a convergence result"** Letters in Mathematical Physics, Volume 64, issue 2, 2003, pp. 119-127, (<https://doi.org/10.1023/A:1025716119825>).
- L. Grilli **"Giochi Differenziali con Orizzonti Asincroni e Applicazioni alla Gestione delle Risorse Rinnovabili"** Phd Thesis, Università di Napoli "Federico II", November 2003.
- M. Bernaschi, L. Grilli, D. Vergni **"Statistical analysis of fixed income market"** Physica A: Statistical Mechanics and its Applications, 308 (1-4), 2002, pp. 381-390, ([https://doi.org/10.1016/S0378-4371\(02\)00590-3](https://doi.org/10.1016/S0378-4371(02)00590-3)).

#### **BOOKS:**

- L. Grilli, M. Bisceglia (2016) **"Informatica di Base"**, 94 pag., Lulu, Inc, ISBN: 978-1-326-55046-2.
- L. Grilli (2016) **"Pillole per un Precorso di Matematica: Terapia Intensiva su Equazioni e Disequazioni"**, 117 pag., Lulu Press, Inc, ISBN: 978-1-326-55550-4
- L. Grilli, M. Bisceglia (2016) **"I Numeri Complessi"**, 70 pag., Lulu Press, Inc ISBN: 978-1-326-62890-1
- L. Grilli, M. Bisceglia (2016) **"Lezioni di Matematica per l'Economia e la Finanza"**, 225 pag., Lulu Press, Inc - Raleigh, NC, ISBN: 978-1-326-75505-8

#### **EDITORIAL ACTIVITY:**

##### **REFEREE FOR:**

Advances in Applied Clifford Algebras; Annals of Dynamic Games; Applied Sciences; Automatica; Applications and Applied Mathematics; Applications and Applied Mathematics: An International Journal; British Journal of Economics, Management & Trade; Communications in

Advanced Mathematical Sciences; Computational Economics; Decisions in Economics and Finance; Energy Economics; Environmental Modeling & Assessment; Entropy; Fundamental Journal of Mathematics and Applications; Fundamental Journal of Mathematics and Applications; Future Internet; International Game Theory Review; International Journal of Geometric Methods in Modern Physics; International Journal of Production Research; Italian Journal of Economics; Journal of Basic and Applied Research International; Journal of Optimization Theory and Applications; Journal of Dynamical Systems and Geometric Theories; Journal of Food Quality; Journal of Evolutionary Economics; Journal of Scientific Research and Reports; Journal of Advanced Physics; Konuralp Journal of Mathematics (KJM); Dynamics; Mathematical Problems in Engineering; Maejo International Journal of Science and Technology; Neural Computing and Applications; Regional Science; Austrian Science Fung (International research projects); Game Theoretic Analysis of Congestion, Safety and Security (book chapter); The B.E. Journal of Theoretical Economics; Turkish Journal of Mathematics and Computer Science.

### **MEMBER OF EDITORIAL BOARD:**

EDITORIAL BOARD - **Applied Mathematical Sciences** ISSN: 1314-7552 (online) ISSN: 1312-885X (print).

EDITORIAL BOARD - **Journal of Applied Economic Sciences** (JAES) - Print ISSN: 1843-6110 Online- ISSN: 2393-5162.

EDITORIAL BOARD - **Symmetry** - Impact Factor: 2.713 (2020) ; 5-Year Impact Factor: 2.612 (2020) - ISSN: 2073-8994.

TOPIC EDITOR - "Sustainability and Universities: Their Contribution to Reach the 17th SDGs".

Participating Journals: **Education Sciences** (ISSN 2227-7102); **Environments** (ISSN 2076-3298), **Social Sciences** (ISSN 2076-0760); **Sustainability** (ISSN 2071-1050). Le riviste: **Environments** (ISSN 2076- 3298), **Social Sciences** (ISSN 2076-0760); **Sustainability** (ISSN 2071-1050)

SPECIAL ISSUE EDITOR (Deadline for manuscript submissions: 31 December 2023): Special Issue "Symmetry/Asymmetry: Differential Geometry and Its Applications", **Symmetry** - Impact Factor: 2.713 (2020) ; 5-Year Impact Factor: 2.612 (2020) - ISSN: 2073-8994.

REVIEWER EDITOR: Frontiers in Applied Mathematics and Statistics - Dynamical Systems

**REVIEWER for Mathematical Reviews/MathSciNet** (Reviewer Number: 135954).

### **MEMBER OF COMMITTEES:**

- Maths Challenge Competition (Coordinator of the Scientific Committee)
- Liceo MATEMATICO (Member of the Working Team)
- DySES (Dynamics of Socio Economic Systems) - (Member of the Scientific Committee)
- Technical program committee DATA ANALYTICS 2020 - The Ninth International Conference on Data Analytics
- DBKDA 2020, The Twelfth International Conference on Advances in Databases, Knowledge, and Data Applications (Technical Program Committee)
- DBKDA 2021, The Thirteenth International Conference on Advances in Databases, Knowledge, and Data Applications, May 30, 2021, to June 03, 2021 - Valencia, Spain (Technical Program Committee)
- X IAQVEC 2019 (Organizing committee)
- DATA ANALYTICS 2021 The Tenth International Conference on Data Analytics (Technical Program Committee)
- DATA ANALYTICS 2020 The Ninth International Conference on Data Analytics (Technical Program Committee)
- DATA ANALYTICS 2019 The Eighth International Conference on Data Analytics (Technical

Program Committee)

- International Conference on Mathematics and Mathematics Education 2019 (ICMME-2019) (Scientific Committee (Mathematics))
- International Conference on Mathematics and Mathematics Education 2018 (ICMME-2018) (Scientific Committee (Mathematics))
- Global Conference on Business, Hospitality and Tourism Research (GLOSEARCH) (Scientific and Paper Review Committee)
- AMASES 2012 (Co-Chair of Organizing Committee)
- II Spain Italy Netherlands Meeting on Game Theory - SING 2 - (Co-Chair of Organizing Committee)
- I Incontro dei giovani ricercatori delle Università pugliesi sul tema "Metodi Matematici per l'Economia e la Finanza", Foggia (Co-Chair of Organizing Committee)

### **PhD Programs:**

Member of the board of professors of the following PhD programs:

- Dottorato di Ricerca "Ambiente, sostenibilità, territori, innovazione e sicurezza - ASTIS" - XL Ciclo (Coordinator)
- Dottorato di Ricerca "Ambiente, sostenibilità, territori, innovazione e sicurezza - ASTIS" - XXXIX Ciclo (Coordinator)
- Dottorato in "SCIENZE ECONOMICHE" Anno accademico di inizio: 2022/2023 - Ciclo: XXXVIII
- Dottorato in "ECONOMIA, CULTURA, AMBIENTE. SCIENZE ECONOMICHE E UMANISTICHE PER LA VALORIZZAZIONE DEI TERRITORI" Anno accademico di inizio: 2021/2022 - Ciclo: XXXVII
- Dottorato in "ECONOMIA, CULTURA, AMBIENTE. SCIENZE ECONOMICHE E UMANISTICHE PER LA VALORIZZAZIONE DEI TERRITORI" Anno accademico di inizio: 2020/2021 - Ciclo: XXXVI
- Dottorato di Ricerca in INNOVAZIONE E MANAGEMENT DI ALIMENTI AD ELEVATA VALENZA SALUTISTICA, XXIX Ciclo, Università di Foggia;
- Dottorato di Ricerca in Economia e Ingegneria Agro-Alimentari, Ambientali e Forestali, XXVII Ciclo, Università degli Studi della Basilicata.
- Dottorato di Ricerca in Teoria delle Scelte Economiche XXV Ciclo, Università di Foggia.
- Dottorato di Ricerca in Economia e Finanza, XXII Ciclo, Università di Foggia.
- Dottorato di Ricerca in Metodi Matematici per le Decisioni Economiche e Finanziarie, XVI-XVIII Ciclo, Università di Foggia.

### **PhD Students/Research Fellows:**

- Sumeyye Gur, University of Ordu – Turkey

Title of PhD Thesis: PARALLEL EQUIDISTANT RULED SURFACES ON DUAL SPACES

Tutor: Prof. Suleyman Senyurt

Co-Tutor: Luca Grilli

- Ceyda Cevahir, University of Ordu – Turkey

Title of PhD Thesis: On Equidistante Parallel Ruled Surfaces Produced by Darboux Vectors in High-Dimensional Space

Tutor: Prof. Suleyman Senyurt

Co-Tutor: Luca Grilli

- Alfonso Guarino, Università di Foggia, Assegnista di Ricerca

Titolo Assegno di Ricerca: "Machine e Deep Learning applicate alla Learning Analytics"

Tutor: Luca Grilli

- Angelo Giacinto Sgarro, Università di Foggia, Assegnista di Ricerca

Titolo Assegno di Ricerca: "Artificial intelligence to support the digitalization and industrial engineering process"

Tutor: Luca Grilli

- Francesca Ranieri, Università di Foggia, Dottoranda in "Economia, Cultura e Ambiente"

Tutor: Luca Grilli

- Paride Vasco, Università di Foggia, Dottorando in "Neuroscience and education"

Tutor: Luca Grilli

- Cristina di Letizia, Università di Foggia, Dottoranda in "Scienze Economiche"

Tutor: Luca Grilli

- Giacinto Angelo Sgarro, Università di Foggia, Dottorando in "ASTIS"

Tutor: Luca Grilli

- Antonio Vairo, Università di Foggia, Dottorando in "ASTIS"

Tutor: Luca Grilli

### **Research PROJECTS:**

- Programma PE GRINS - GRINS - GROWING RESILIENT, INCLUSIVE AND SUSTAINABLE" (cod. PE0000018 CUP: C93C22005270001). Avviso 341/2022  
"Partenariati estesi alle università, ai centri di ricerca, alle aziende per il finanziamento di progetti di ricerca di base". Piano Nazionale di Ripresa e Resilienza, Missione 4 "Istruzione e ricerca" – Componente 2 "Dalla ricerca all'impresa" – Investimento 1.3, finanziato dall'Unione europea – NextGenerationEU – Bando a Cascata GRINS - GROWING RESILIENT, INCLUSIVE AND SUSTAINABLE - LOW CARBON POLICIES AND SOCIO-ECONOMIC SUSTAINABILITY SPOKE N.6, WP. 4, LOW CARBON POLICIES Linea di intervento B, Tematica 7: "Low carbon policies and sustainability strategies in supply chains: a focus on agrifood in the South of Italy" - Progetto: TESSERE. CUP Progetto: D73C24000370006. Finanziamento: 200K (Principal Investigator)
- SOFT COMPUTING WORKING GROUP: The working group is made up of 23 national and international research institutions and aims to develop methods and techniques based on Soft Computing, in order to open new theoretical and application perspectives to the intelligent analysis of data and the solution of complex problems. Working Group: SOFT COMPUTING AND DYNAMICS OF SOCIO-ECONOMIC SYSTEMS – Research Laboratory of Department of Economics, Management and Territory, University of Foggia Scientific coordinator: prof.ssa Lucia Maddalena (member of the project team)
- Research Project: Artificial Intelligence aimed at risk assessment of Problematic adolescent internet Use with Serious game (AI PLUS, AI+). PRA2022, UniFG, Principal Investigator.
- Research Project: Malta-Italy Mobility for the Exploration and Elaboration of Future Projects in Artificial Intelligence, Robotics and Blockchain in Agri- and Aqua- Culture. Acronimo: MIMOSA. Malta Council for Science and Technology (MCST) (member of the project team).
- Research Project -TRUBLO OPEN CALL 3 FOR PROPOSALS - Project CERES - Title: AgriCultural product Traceability and mERchant Escrow, This project has received funding from the European Union's Horizon 2020 Research and Innovation programme under grant agreement n° 957228 (member of the project team)
- Research Project - "Data Analytics applicata alla Learning Analytics" - Responsabile/Tutor Research Fellow - Finanziamento da Progetto di ricerca "TILD (Teaching and Learning Development).
- Research Project - ARTIFICIAL INTELLIGENCE TO SUPPORT THE DIGITALIZATION AND INDUSTRIAL ENGINEERING PROCESS - Responsabile del Progetto/Tutor Research Fellow - Finanziamento da Bando Competitivo Ministero dello Sviluppo Economico (M.I.S.E.), Progetto MiSE-DGPIIPMI "Industrial engineering and management di impresa", Progetto prot. n. 55214 del 03.03.2021.
- Research Project - ANALISI E STUDIO DELL'IMPATTO DI MODELLI IT-BASED PER LA GOVERNANCE TERRITORIALE, IL MANAGEMENT SANITARIO E LA VALORIZZAZIONE DEL TRASFERIMENTO TECNOLOGICO (Hermes), Dipartimento di Economia, Università di Foggia (Componente - Modelli Matematici applicati all'Economia Sanitaria).
- Progetto - "Modello per l'allocazione ottimale del personale adibito al servizio di ausiliario e pulizie nei plessi della ASL FG (circa 350 addetti)." - richiesta del A.U. Sanitaservice ASL FG Srl: Richiesta Protocollo nr. 28091-I/7 del 18/09/2018. (Responsabile - Modello matematico per allocazione delle risorse umane nelle varie postazioni dislocate nel territorio provinciale - Raccolta ed elaborazione dei dati dei dipendenti - Elaborazione delle

graduatorie per ogni postazione - Produzione di rapporti scientifici).

- Progetto - "Modello matematico di allocazione ottimale delle risorse umane nella gestione del servizio di 118 nella Provincia di Foggia in funzione di "n" variabili preventivate" - richiesta del A.U. Sanitaservice ASL FG Srl: UNIFGCLE - Prot. n. 0019639 - II/4 del 17/07/2017 (Responsabile - Modello matematico per allocazione delle risorse umane nelle varie postazioni dislocate nel territorio provinciale - Raccolta ed elaborazione dei dati dei dipendenti - Elaborazione delle graduatorie per ogni postazione - Produzione di rapporti scientifici).
- Progetto MARINE- Rete Pugliese Interdisciplinare multi-settore per l'innovazione tecnologica, la ricerca scientifica e lo sviluppo di servizi Marini e Marittimi nell 'ambito dell 'Economia Blu (Gruppo Energia dal mare) Regione Puglia, (Componente GDL10 e GDL 14 - contributo su metodi matematici per il supporto alle decisioni strategiche), da aprile 2016 fino ad oggi.
- Progetto formativo PON (cod. 3417037 PON 2007-2013) dal titolo: "Sviluppo di prodotti alimentari innovativi mediante soluzioni biotecnologiche, impiantistiche e tecnologiche (PROINNO BIT)", - responsabile scientifico Prof.ssa Carla Severini (Componente - supporto all'elaborazione dati e alla valutazione delle alternative ottimali con metodi di analisi multicriteria).
- Progetto formativo PON (cod. PON 02 00186 2937475 PON 2007-2013) dal titolo: "Protocolli tecnologici e clinici innovativi per la produzione di alimenti funzionali (PRO.ALI.FUN.)", responsabile scientifico Prof. Agostino Sevi (Componente - supporto all'elaborazione dati e alla valutazione delle alternative ottimali con metodi di analisi multicriteria).
- Progetto PON (cod. 02 00186 3417392 PON 2007-2013) dal titolo: "Soluzioni innovative di packaging per il prolungamento della shelf-life di prodotti alimentari (InFoPack)", responsabile scientifico Prof.ssa Carla Severini (Componente - supporto all'elaborazione dati e alla valutazione delle alternative ottimali con metodi di analisi multicriteria).
- P.S.R. 2007-2013 Misura 124 Progetti Integrati di Filiera - 2012 (Responsabile Scientifico Prof. Francesco CONTO') "NORD WINE" - "SUD WINE" - "CEREAL QUALITY" (Componente - Elaborazione dati e stesura di report per ciascuna filiera).
- PRIN, Anno 2012, Titolo "Long Life, High Sustainability", Coordinatore Scientifico Piergiovanni Luciano (Univ. di Milano), (Componente - Analisi Multicriteria applicata alla scelta delle diverse alternative).
- Progetto "LOGIN - Logistica integrata", primo proponente/referente: Driving Advances of ICT in South Italy - Net, S. C. AR. L. con sede legale presso Università di Bari, finanziato da PON FESR 2007 - progetto Nuove Tecnologie per il Made in Italy (Componente - Analisi Stato dell'arte e della pratica - Analisi statistica e gestione dati).
- PRIN, Anno 2011, Titolo "Long Life, High Sustainability", Coordinatore Scientifico Piergiovanni Luciano (Univ. di Milano), approvato e non finanziato (Componente - Applicazione dell'Analisi Multicriteria in contesto fuzzy).
- A.A.2011-2012 Progetto "Matematica tra gioco e realtà ", Università di Foggia, finanziato dalla Fondazione Banca del Monte di Foggia (Componente - Creazione della competizione Maths Challenge).
- A.A.2009-2010 Progetto Reti di Laboratori LAIFF, capofila centro di ricerca interdipartimentale BioAgroMed, Università di Foggia, finanziato dalla Regione Puglia (Componente - Implementazione e aggiornamento del Laboratorio di Analisi Quantitativa dei Dati).
- Local Project, 2009/2010 Progetto "Lo sviluppo del mercato energetico in Puglia: energie rinnovabili ed implicazioni economico-finanziarie", finanziato dalla Fondazione Cassa Di Risparmio Di Puglia, (Componente - Modelli Matematici per la gestione delle risorse rinnovabili).
- Local Project, Università di Foggia, 2005/2006, Title "Strategical Interactions and Applications to Economics and Finance" (Responsabile - Teoria e Applicazioni della teoria dei giochi).
- National Project, PRIN-2004, Titolo "Non-Linear Models in Economics and Finance" (Componente - Teoria e applicazione della teoria dei giochi).
- Local Project, Università di Foggia, 2003/2004/2005, Title "Mathematical Methods for Renewable Resources Management" (Responsabile - Modelli matematici per la gestione delle risorse rinnovabili).
- National Project PRIN-2002, Titolo "Non-Linear Models in Economics and Finance"

(Componente - Teoria e Applicazione della teoria dei giochi).

- Local Project, Università di Foggia, 2002, "Mathematical Methods for Decisions in Economics and Finance" (Responsabile - Teoria e Applicazione della teoria dei giochi).
- Local Project, Università di Foggia, 2001, "Mathematical Methods in Economics and Finance" (Responsabile - Teoria e Applicazione della teoria dei giochi).
- Research Project, 1999-2000, "Quantitative Methods in Finance" at IAC-CNR Roma (Componente - Studio dei Mercati Fixed-Income).

## **SCIENTIFIC SOCIETIES:**

Member of ISDG (International Society of Dynamic Games);

Member of SOCIO (Sociedad Colombiana de Investigacion de Operaciones);

Member of AMEF (Master in Economia e Finanza);

Member of AMASES (Associazione per la Matematica Applicata alle Scienze Economiche e Sociali);

Member of EMS (European Mathematical Society).

Member of MATHESIS (Società Italiana di Scienze Matematiche e Fisiche).

Member of ISOC (Internet Society).

## **TEACHING:**

### **Masters/PhD:**

- **Trade Policy Analysis and Forecasting, decisions making and game theory**, Master Course, Faculty of Economics, Poznan University of Life Science (Poland), from March to June 2024, 30h.
- **Economic Problems in English**, Master Course, Faculty of Economics, Poznan University of Life Science (Poland), from March to June 2024, 30h.
- **Game Theory**, Phd Course, Faculty of Economics, Poznan University of Life Science (Poland), from November to December 2023, 6h.
- **Trade Policy Analysis and Forecasting, decisions making and game theory**, Master Course, Faculty of Economics, Poznan University of Life Science (Poland), from March 1st to May 31st 2022, 45h.
- **Economic Problems in English**, Master Course, Faculty of Economics, Poznan University of Life Science (Poland), from March 1st to May 31st 2022, 16h.
- **- II TERM 2020-2021 – Master course in "Trade Policy and Forecasting" – Lab. "Games and Decision Making" – 30 hours**, Poznań University of Life Sciences
- **Master "Nuove Frontiere nella didattica della matematica", Università di Foggia, 2010/2011**
- **Master "Nuove Frontiere nella didattica della matematica", Università di Foggia, 2009/2010**
- **Post-degree in Mathematics: Applicazioni e Innovazioni Tecnologiche, 2008/2009**
- **Deuxième Module (femmes et développement), Master Tempus: Femmes, Travail et Formation, Université Cadi Ayyad, Marrakech, Maroc, 23/01/2006-27/01/2006:** Course PCIE, 20h.
- **Premier Module (formation des femmes), Master Tempus: Femmes, Travail et Formation, Université de Tunis, 22/11/2005-25/11/2005:** Course PCIE, 20h.
- **II Term, VI edition of MEF (Master in Economics and Finance) 2001/2002:** Assistant prof. for the course of Finance I, prof. M. Pagano.

### **Academic:**

- **II Semester 2024/2025:** "Didattica della Matematica", Università degli Studi di Foggia, Dipartimento DISTUM
- **I Semester 2024/2025:** Course of "Decisioni in Economia e Finanza", Università degli Studi di Foggia, Dipartimento di Economia, Management e Territorio
- **I Semester 2024/2025:** Course of "Matematica per l'Economia", Università degli Studi di Foggia, Dipartimento di Economia, Management e Territorio
- **II Semester 2023/2024:** "Istituzioni di Matematica", Università degli Studi di Foggia, Dipartimento DISTUM

- **I Semester 2023/2024:** Course of "Decisioni in Economia e Finanza", Università degli Studi di Foggia, Dipartimento di Economia, Management e Territorio
- **I Semester 2023/2024:** Course of "Matematica per l'Economia", Università degli Studi di Foggia, Dipartimento di Economia, Management e Territorio
- **I Semester 2022/2023:** Course of "Decisioni in Economia e Finanza", Università degli Studi di Foggia, Dipartimento di Economia, Management e Territorio
- **I Semester 2022/2023:** Course of "Matematica per l'Economia", Università degli Studi di Foggia, Dipartimento di Economia, Management e Territorio
- **I Semester 2021/2022:** Course of "Matematica Generale", [Università degli Studi di Foggia, Dipartimento di Economia](#)
- **I Semester 2021/2022:** Course of "Matematica per l'Economia", [Università degli Studi di Foggia, Dipartimento di Economia, Management e Territorio](#)
- **I Semester 2020/2021:** Course of "Matematica Generale", [Università degli Studi di Foggia, Dipartimento di Economia](#)
- **I Semester 2020/2021:** Course of "Matematica per l'Economia e la Finanza", [Università degli Studi di Foggia, Dipartimento di Economia](#)
- **I Semester 2019/2020:** Course of "Matematica Generale", [Università degli Studi di Foggia, Dipartimento di Economia](#)
- **I Semester 2019/2020:** Course of "Matematica per l'Economia e la Finanza", [Università degli Studi di Foggia, Dipartimento di Economia](#)
- **I Semester 2018/2019:** Course of "Matematica Generale", [Università degli Studi di Foggia, Dipartimento di Economia](#)
- **I Semester 2018/2019:** Course of "Matematica per l'Economia e la Finanza", [Università degli Studi di Foggia, Dipartimento di Economia](#)
- **I Semester 2017/2018:** Course of "Matematica Generale", [Università degli Studi di Foggia, Dipartimento di Economia](#)
- **I Semester 2017/2018:** Course of "Matematica per l'Economia e la Finanza", [Università degli Studi di Foggia, Dipartimento di Economia](#)
- **I Semester 2016/2017:** Course of "Matematica Generale", [Università degli Studi di Foggia, Dipartimento di Economia](#)
- **I Semester 2016/2017:** Course of "Matematica per l'Economia e la Finanza", [Università degli Studi di Foggia, Dipartimento di Economia](#)
- **I Semester 2015/2016:** Course of "Matematica Generale", [Università degli Studi di Foggia, Dipartimento di Economia](#)
- **I Semester 2015/2016:** Course of "Matematica per l'Economia e la Finanza", [Università degli Studi di Foggia, Dipartimento di Economia](#)
- **I Semester 2014/2015:** Course of "Matematica Generale", [Università degli Studi di Foggia, Dipartimento di Economia](#)
- **I Semester 2014/2015:** Course of "Matematica per l'Economia e la Finanza", [Università degli Studi di Foggia, Dipartimento di Economia](#)
- **I Semester 2014/2015:** Course of "Strumenti Quantitativi per il Supporto alle Decisioni Strategiche In Marketing" (LM)', [Università degli Studi di Foggia, Dipartimento di Economia](#)
- **I Semester 2013/2014:** Course of "Matematica Generale", [Università degli Studi di Foggia, Dipartimento di Economia](#)
- **I Semester 2013/2014:** Course of "Strumenti Quantitativi per il Supporto alle Decisioni Strategiche In Marketing" (LM), [Università degli Studi di Foggia, Dipartimento di Economia](#)
- **II Semester 2012/2013:** Course of "Strumenti Quantitativi per il Supporto alle Decisioni Strategiche In Marketing" (LM), [Università degli Studi di Foggia, Dipartimento di Economia](#)
- **I Semester 2012/2013:** Course of "Matematica Generale", [Università degli Studi di Foggia, Dipartimento di Economia](#)
- **II Semester 2011/2012:** Course of "Strumenti Quantitativi per il Supporto alle Decisioni Strategiche In Marketing" (LM), [Università degli Studi di Foggia, Facoltà di Economia](#)
- **I Semester 2011/2012:** Course of "Matematica Generale", [Università degli Studi di Foggia, Facoltà di Economia](#)
- **II Semester 2010/2011:** Course of "Metodi e Modelli Matematici per l'Economia e

l'Ambiente", Università degli Studi di Foggia, Facoltà di Economia

- **I Semester 2010/2011:** Course of "Matematica Generale", Università degli Studi di Foggia, Facoltà di Economia
- **II Semester 2009/2010:** Course of "Metodi e Modelli Matematici per l'Economia e l'Ambiente", Università degli Studi di Foggia, Facoltà di Economia (Manfredonia)
- **I Semester 2009/2010:** Course of "Matematica Generale", Università degli Studi di Foggia, Facoltà di Economia
- **II Semester 2008/2009:** Course of "Metodi e Modelli Matematici per l'Economia e l'Ambiente", Università degli Studi di Foggia, Facoltà di Economia (Manfredonia)
- **I Semester 2008/2009:** Course of "Matematica Generale", Università degli Studi di Foggia, Facoltà di Economia
- **I Semester 2007/2008:** Course of "Matematica Generale", Università degli Studi di Foggia, Facoltà di Economia
- **II Semester 2006/2007:** Course of "Metodi e Modelli Matematici per l'Economia e l'Ambiente", Università degli Studi di Foggia, Facoltà di Economia (Manfredonia)
- **I Semester 2006/2007:** Course of "Matematica Generale", Università degli Studi di Foggia, Facoltà di Economia
- **II Semester 2005/2006:** Course of "Elaborazione Automatica dei Dati per le Decisioni Economiche e Finanziarie", Università degli Studi di Foggia, Facoltà di Economia(Manfredonia)
- **II Semester 2005/2006:** Course of "Sistemi Informatici per il Supporto alle Decisioni", Università degli Studi di Foggia, Facoltà di Economia (Manfredonia)
- **I Semester 2005/2006:** Course of "Matematica Generale", Università degli Studi di Foggia, Facoltà di Economia
- **II Semester 2004/2005:** Course of "Elaborazione Automatica dei Dati per le Decisioni Economiche e Finanziarie", Università degli Studi di Foggia, Facoltà di Economia(Manfredonia)
- **II Semester 2004/2005:** Course of "Sistemi Informatici per il Supporto alle Decisioni", Università degli Studi di Foggia, Facoltà di Economia (Manfredonia)
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- **II Semester 2003/2004:** Course of "Matematica Generale", Università degli Studi di Foggia, Facoltà di Economia (Manfredonia)
- **II Semester 2003/2004:** Course of "Elaborazione Automatica dei Dati per le Decisioni Economiche e Finanziarie", Università degli Studi di Foggia, Facoltà di Economia(Manfredonia)
- **II Semester 2003/2004:** Course of "Sistemi Informatici per il Supporto alle Decisioni", Università degli Studi di Foggia, Facoltà di Economia (Manfredonia)
- **I Semester 2002/2003** Course of "Elaborazione Automatica dei Dati per le Decisioni Economiche e Finanziarie", Università degli Studi di Foggia, Facoltà di Economia
- **I Semester 2002/2003** Course of "Sistemi Informatici per il Supporto alle Decisioni", Università degli Studi di Foggia, Facoltà di Economia
- **I Semester 2002/2003** Course of "Matematica Generale", Università degli Studi di Foggia, Facoltà di Economia (Manfredonia)
- **II Semester 2001/2002** Course of "Elaborazione Automatica dei Dati per le Decisioni Economiche e Finanziarie", Università degli Studi di Foggia, Facoltà di Economia (Manfredonia)
- **I Semester 2001/2002 Assistant Prof.** for the course of Mathematics at Università degli Studi di Foggia, Facoltà di Economia
- **I Semester 2000/2002 Assistant Prof.** for the course of Mathematics at Università degli Studi di Napoli, Facoltà di Economia
- **I Semester A.A. 1999/2000 Tutor** for the course of Analysis I at faculty of Ingegneria dell'Università degli Studi di L'Aquila, Prof. K. Engel (engel@ing.univaq.it) and Prof. V. Georgiev (georgiev@univaq.it);

- **Semester A.A. 1998/99 Tutor for the course of Analysis II** in the Faculty of Engineers of L'Aquila with Prof. Bruno Rubino;

#### **Courses for Teachers and Students from Primary and Secondary School**

##### **Courses supported by E.U.**

- Fall 2008: **PALESTRA DI MATEMATICA**, (progetto PON B1.2007), at "Istituto VITTORIO EMANUELE III" in Lucera.
- Spring 2009: **RISCOVERIRE LA MATEMATICA**, (progetto PON C1.2008), at "Istituto VITTORIO EMANUELE III" in Lucera.
- Spring 2009: **GIOCA COI NUMERI**, (progetto PON C1.2008), at Direzione didattica statale XII circolo "Giacomo Leopardi" in Foggia.
- Spring 2009: **CONOSCERE LA MATEMATICA PER AFFRONTARE IL FUTURO**, (progetto PON C1.2008), at "Istituto Giannone" in Foggia.
- Spring 2010: **MATEMATICA PER IL CITTADINO**, (PROGETTO PON); at "Scuola Media G.Bovio" Foggia.
- Spring 2010: **CIBO PER LA MENTE**, (PROGETTO PON), at "Liceo Scientifico Marconi", Foggia.
- Spring 2010: **Ipotizzare, problematizzare, rappresentare. Giocare con la matematica**, (PROGETTO PON), DIREZIONE DIDATTICA SANTA CHIARA, FOGGIA.
- Spring 2011: **LEGGERE CON LA MATEMATICA**, (PROGETTO PON); at "Scuola Media G.Bovio" Foggia.
- Spring 2011: **IN EUROPA CON LA MATEMATICA**, (PROGETTO PON), at "Liceo Scientifico Marconi", Foggia.
- Spring 2011: **Ipotizzare, problematizzare, rappresentare. Giocare con la matematica II ed.**, (PROGETTO PON), DIREZIONE DIDATTICA SANTA CHIARA, FOGGIA.
- Spring 2012: **Il laboratorio della matematica - 1**, (PROGETTO PON); at "Scuola Media Dante Alighieri", Foggia.
- Spring 2012: **Matematica in gioco**, (PROGETTO PON), at "Scuola Media Bovio", Foggia.
- Spring 2012: **Gioco con numeri e forme**, (PROGETTO PON), DIREZIONE DIDATTICA SALANDRA, TROIA, FG.
- Fall 2012: **La Matematica e il Mondo Reale**, at "Liceo Scientifico Marconi", Foggia.
- Fall 2012: **Il laboratorio della matematica - 2**, (PROGETTO PON); at "Scuola Media Dante Alighieri", Foggia..
- Spring 2013: **Ad Maiora**, (PROGETTO PON); at "Istituto Comprensivo", Carapelle, FG.
- Fall 2014: **Matematicamente in Gioco**, PON C1, at VIII Circolo Didattico "San Pio X" - (Foggia).
- Spring 2014: **Comunicazione con linguaggio matematico** (PON C1), at Scuola Media G.Bovio Foggia.
- Spring 2014: **Ludomatematica** (PON C1), at Scuola Media Dante Alighieri, Foggia.
- Spring 2014: **Matematica...mente** (PON C1), at Istituto Comprensivo, Carapelle, FG.
- Spring 2019: LICEO 'MARIA IMMACOLATA' Modulo: **Diventare ricercatore 2**
- Winter 2019: ISTITUTO TECNICO 'BLAISE PASCAL' Modulo: **Ponte Pascal-Economia 2<sup>a</sup> annualità**
- Fall 2019: ISTITUTO TECNICO 'NOTARANGELO - ROSATI' Modulo: **Orientamento Universitario Economico**

#### **COURSES FOR TEACHERS TRAINING**

- **2023/2024, Percorsi di formazione iniziale (ex art. 13 DPCM 4/08/2023), Casse di Concorso A026 - MATEMATICA, attività didattica FONDAMENTI DI MATEMATICA PER LA SCUOLA SECONDARIA**\_\_SSD\_MAT/05\_\_CFU\_4\_\_ore on-line \_24\_\_;
- **2023/2024, Percorsi di formazione iniziale (ex art. 13 DPCM 4/08/2023), Classe di Concorso A027 – MATEMATICA E FISICA, attività didattica FONDAMENTI DI MATEMATICA PER LA SCUOLA SECONDARIA**\_\_SSD\_MAT/05\_\_CFU\_4\_\_ore on-line \_24\_\_;
- **2023/2024, Percorsi di formazione iniziale (ex art. 13 DPCM 4/08/2023), Classe di Concorso A047 – SCIENZE MATEMATICHE APPLICATE, attività didattica MATEMATICA PER L'ECONOMIA E LA FINANZA**\_\_SSD\_SECS.S/06\_\_CFU\_4\_\_ore

on-line \_18\_\_\_;

- **2022/2023: Il Gioco degli Scacchi - Palestra della mente** nel corso MATEMATICA IN ECONOMIA, CULTURA E AMBIENTE, Polo PUGLIESE – SEZ. FOGGIA – MATEMATICA – 2022-2023 della Fondazione "I Lincei Per la Scuola"
- **III Term, 2014-2015:** TFA - Didattica della matematica per la scuola media II, Università di Foggia
- **III Term, 2008/2009:** Course at SSIS-Puglia, "Laboratorio di Didattica della Matematica per l'Economia"
- **III Term, 2008/2009:** Course at SSIS-Puglia, "Laboratorio di Didattica della Matematica"
- **I Term, 2007/2008:** Course at SSIS-Puglia, "Metodi Matematici per le Scelte Economiche e Finanziarie"
- **III Term, 2006/2007:** Course at SSIS-Puglia, "Laboratorio di Didattica della Matematica per l'Economia"
- **III Term, 2006/2007:** Course at SSIS-Puglia, "Laboratorio di Didattica della Matematica"
- **III Term, 2005/2006:** Course at SSIS-Puglia, "Laboratorio di Didattica della Matematica per l'Economia"
- **III Term, 2005/2006:** Course at SSIS-Puglia, "Laboratorio di Didattica della Matematica"
- **III Term, 2004/2005:** Course at SSIS-Puglia, "Laboratorio di Didattica della Matematica per l'Economia"
- **III Term, 2004/2005:** Course at SSIS-Puglia, "Laboratorio di Didattica della Matematica"
- **III Term, 2002/2003:** Course at SSIS-Puglia, "Laboratorio di Didattica della Matematica per l'Economia"
- **III Term, 2002/2003:** Course at SSIS-Puglia, "Laboratorio di Didattica della Matematica"
- **II Term, 2002/2003:** Course at SSIS-Puglia, "Didattica della Matematica I";
- **III-IV Term 2001/2002:** courses at SSIS-Puglia, "Laboratorio di Didattica della Matematica" and "Laboratorio di Didattica della Matematica per le scienze economiche e finanziarie";

According to law 679/2016 of the Regulation of the European Parliament of 27th April 2016, I hereby express my consent to process and use my data provided in this CV.

The undersigned is aware that in the event of a false declaration, he will be punished pursuant to the Criminal Code according to the provisions of art. 76 of Presidential Decree 445/2000 and that, furthermore, if the content of any of the declarations made is not verifiable from the contract, the benefits resulting from the provision eventually issued on the basis of the untruthful declaration will lapse (art. 75 Presidential Decree 445/2000) . Declares to be informed, pursuant to and for the purposes of art. 18 of Legislative Decree 196/2003, that the personal data collected will be processed, also with IT tools, exclusively in the context of the procedure for which this declaration is made.

Foggia, 14/01/2025

Signature