

Marco Forti PhD

RESEARCH FELLOW · UNIVERSITY OF ROME "SAPIENZA"

✉ marco.forti@uniroma1.it - marco.forti@unicampus.it - marco.f.4t@gmail.com

ORCID: 0000-0003-2670-4869

Research Experience

University of Rome "Sapienza"

ADVISOR: PIERPAOLO D'URSO

Foggia, Italy

April 2025 - Present

- Research project: "Application of appropriate techniques for the analysis of statistical data related to film and audiovisual support policies."

University of Foggia

ADVISOR: ANDREA NIGRI

Foggia, Italy

July 2024 - March 2025

- Research project: "Statistical modeling for university dropout monitoring and prediction"

University of Rome "Sapienza"

ADVISOR: PROF. MARIA BRIGIDA FERRARO

Rome, Italy

July 2023 - June 2024

- Research project: "New developments on clustering of text, functional and other complex data"

University of Rome "Sapienza"

ADVISOR: PROF. ANGELO CASTALDO

Rome, Italy

May 2021 - June 2023

- Research project: "Construction of complex datasets and Machine Learning methods for policy impact evaluation"

Agenzia Nazionale per i servizi sanitari (AGENAS)

RESEARCH DEPARTMENT

Rome, Italy

2018 - 2021

- Cohort and survival analysis

University Sant'Anna

ADVISOR: PROF. STEPHAN COLLIGNON

Pisa, Italy

April 2015 - March 2016

- Research project: "European economic governance"

Teaching Experience

2025	Data analysis 2 , PhD course - University of Foggia, Department of Economics, Management and Territory	<i>Foggia, Italy</i>
2025	Data analysis 1 , PhD course - University of Foggia, Department of Economics, Management and Territory	<i>Foggia, Italy</i>
Fall 2023 - present	Probability and Statistics , Master's Degree Program in Biomedical Engineering - University Campus Biomedico, Faculty of Engineering	<i>Rome, Italy</i>
Fall 2023 - present	Probability and Statistics , Master's Degree Program in Medicine and Surgery "MedTech" - University Campus Biomedico, Faculty of Medicine	<i>Rome, Italy</i>
Spring 2023 - Winter 2024	Statistics , Program in Molecular Biology, Medicinal Chemistry and Computer Science for Pharmaceutical Applications - University of Rome "La Sapienza", Faculty of Pharmacy and Medicine	<i>Rome, Italy</i>
Spring 2025 - present	Fundamentals of R programming , John Cabot University - Department of Mathematics, Natural, and Applied Sciences	<i>Rome, Italy</i>
Fall 2022 - present	Statistics 1 , John Cabot University - Department of Mathematics, Natural, and Applied Sciences	<i>Rome, Italy</i>
Spring 2023	Statistics 2 , John Cabot University - Department of Mathematics, Natural, and Applied Sciences	<i>Rome, Italy</i>
Fall 2021	The Statistics of Data Science , Telecom Italia Mobile (TIM)	
Fall 2020	Elements of Statistics , Telecom Italia Mobile (TIM)	

Education

University of Rome "La Sapienza"

Rome

PHD STATISTICS - METHODOLOGICAL STATISTICS

2022

- Advisor: Prof. Marco Lippi

University of Rome "La Sapienza"

Rome

ADVANCED COURSES AND WORKSHOPS

2016 – 2020

- EM algorithm and ML estimation of mixture models
- Capture recapture models
- Tensor analysis
- Spatial econometrics
- Analysis of circular data
- Graphic models

University Pompeu Fabra

Barcelona (Spain)

ADVANCED BAYESIAN TIME SERIES

2018

- Instructor: Prof. Gary Koop

Istituto Superiore di Sanità

Rome (Italy)

LA VALUTAZIONE DEGLI ESITI NELLA PRATICA CLINICA CORRENTE

2018

- Instructor: Dr. Paola D'Errigo

University of Perugia (Italy)

Perugia

INTERUNIVERSITY SCHOOL OF MATHEMATICS (SMI)

2017

- Mathematical statistics
- Partial differential equations

Einaudi Institute for Economics and Finance (EIEF)

Rome (Italy)

ADVANCED COURSES

2013 – 2016

- Latent variables and finite mixture models
- Topics in VAR modelling

University of Rome "La Sapienza"

MSc ECONOMICS

- Advisor: Prof. Massimiliano Tancioni

Rome

2013

University of Rome "La Sapienza"

BSc ECONOMICS

- Advisor: Prof. Giancarlo Gandolfo

Rome

2007

Professional Experience

- Oct. 2024 - Present **Senior academic member**, M & S Research hub
- Sept. 2023 **Senior expert**, Svimez
- Dec. 2023
- Sept. 2023 **Data manager**, University of Rome "La Sapienza" - Faculty of Medicine
- Dec. 2023
- 2021 - 2023 **Monitoring committee**, University of Rome "La Sapienza" - Faculty of Medicine
- 2022 - 2023 **Expert Statistician**, Deloitte consulting s.r.l.
- 2018 - 2021 **Researcher Statistician**, Agenzia Nazionale per i servizi sanitari (AGENAS)
- 2017 - 2018 **Contract researcher**, Svimez
- 2016-2018 **Statistician**, Presidenza del Consiglio dei Ministri/Invitalia
- 2016 - 2017 **Contract analyst**, KPMG international
- 2015 - 2016 **Researcher**, CER - Centro Europa Ricerche

Publications

PUBLISHED

- Forti, M.**; Nigri, A.; Hanlin S. "Skew-normal finite mixture models for change-point detection in time series", IES conference book (2025) ISBN: 978-88-5495-849-4
- Forti, M.**; Bilancia, M.; Cafarelli, B.; Del Gobbo, E.; Nigri, A. "Multinomial Finite Mixture Models for predicting university drop-out", Quality & Quantity (2025) DOI: 10.1007/s11135-025-02135-5
- Forti, M.**; Ferraro, M. B.; Giordani, P. "Fuzzy clustering with L0 regularization", Annals of Operations Research (2024), DOI: 10.1007/s10479-025-06502-1.
- Forti, M.**; Ferraro, M. B.; Giordani, P. "L0-penalized membership in sparse fuzzy clustering", SIS conference book, Bari, Italy (2024), ISBN: 978-3-031-64447-4.
- Giordani, P. **Forti, M.**; Ferraro, M. B.; "FKML0: a Matlab routine for sparse fuzzy clustering", 2024 IEEE International Conference on Fuzzy Systems (FUZZ-IEEE), pp. 1-8, DOI: 10.1109/FUZZ-IEEE60900.2024.10611853
- Antonelli, M. A.; Castaldo, A.; **Forti, M.**; Marrocco, A.; Salustri, A. "Workplace accidents, economic determinants and under-reporting: An empirical analysis in Italy", International Journal of Manpower. DOI: 10.1108/IJM-01-2024-0026
- Barile B.; **Forti, M.**; Castaldo, A.; Marrocco, A. 2024, "Causal impact of economic subsidies on firm bankruptcy using machine learning uplift modelling" Scientific reports, <https://doi.org/10.1038/s41598-024-60348-4>
- Ricci L.; Tombini M.; Savastano E.; Pulitano P.; Piccioli M.; **Forti, M.**; Narducci F.; Sancetta B.; Mecarelli O.; Ciccozzi M.; Di Lazzaro V.; Assenza G.. 2024 "Quantitative EEG analysis of Brivaracetam in drug-resistant epilepsy: A pharmaco-EEG study", Clinical Neurophysiology, DOI: 10.1016/j.clinph.2024.04.023
- Forti, M.**; Castaldo, A.; Marrocco, A. 2023. "Modelli a mistura finita per la valutazione delle politiche pubbliche: studio sui Bandi ISI-INAIL", Capitolo in "È possibile incentivare la sicurezza sui luoghi di lavoro? Evidenze e approcci sulla valutazione di efficacia", ed. G. Giappichelli, ISBN 9791221105001. - (2023), pp. 173-184
- Forti, M.**; Castaldo, A.; Marrocco, A. 2023. "Valutazione d'impatto della politica ISI-INAIL sulla sopravvivenza delle imprese", Capitolo in "È possibile incentivare la sicurezza sui luoghi di lavoro? Evidenze e approcci sulla valutazione di efficacia", ed. G. Giappichelli, ISBN 979-12-211-0500-1. - (2023), pp. 185-209

- Antonelli, M. A.; Castaldo, A.; **Forti, M.**; Marrocco, A.; Salustri, A. 2024. "An alternative approach to understanding occupational safety and health (OSH): an empirical insurance cost perspective in Italy", *Applied economics letter*, ISSN 1350-4851. - (2024), pp. 1-8. DOI: <https://doi.org/10.1080/13504851.2024.2308564>
- Castaldo, A.; Daddi, S.; **Forti, M.**; Marrocco, A.; Antonelli, M. A.; Germani, A. R.; 2023. "Le politiche di sostegno agli investimenti in SSL influiscono sulla produttività delle imprese?" Chapter inside the volume: "E' possibile incentivare la sicurezza sui luoghi di lavoro? Evidenze e approcci sulla valutazione di efficacia" - ISBN 979-12-211-0500-1, pp. 213-236 - G. Giappichelli Editore s.r.l.
- Antonelli, M. A.; **Forti, M.**; Salustri, A., Marrocco, A. 2023. "Un'analisi economico-territoriale esplorativa della sicurezza sul lavoro in Italia" Chapter inside the volume: "È possibile incentivare la sicurezza sui luoghi di lavoro? Concezione, contesto e implementazione dei Bandi ISI Inail" - ISBN 9791221101294, G. Giappichelli Editore s.r.l.
- Castaldo, A.; Germani, A. R.; **Forti, M.**; Salustri, A., Marrocco, A. 2023. "Le determinanti degli infortuni sul lavoro: un'analisi sull'eterogeneità a livello europeo" Chapter inside the volume: "È possibile incentivare la sicurezza sui luoghi di lavoro? Concezione, contesto e implementazione dei Bandi ISI Inail" - ISBN 9791221101294, pp. 177-196 - G. Giappichelli Editore s.r.l.
- Antonelli, M. A.; **Forti, M.**; Salustri, A., Marrocco, A. 2023. "Gli infortuni sul lavoro in Italia: un'analisi empirica a livello regionale" Chapter inside the volume: "È possibile incentivare la sicurezza sui luoghi di lavoro? Concezione, contesto e implementazione dei Bandi ISI Inail" - ISBN 9791221101294, G. Giappichelli Editore s.r.l.
- Castaldo, A., Germani A. R., **Forti, M.**, Salustri, A., Marrocco, A. 2023. "Drivers and frictions of workplace accidents: an empirical investigation of cross-country European heterogeneity" *Applied economics* - ISSN 0003-6846, pp. 1-16. DOI: 10.1080/00036846.2023.2203458
- Antonelli, M. A., **Forti, M.**, Salustri, A., Marrocco, A. 2023. "Accidents at work in Italy: an empirical analysis at the regional level.", *Public Finance Research Papers*, n. 60 – Institute of Economics and Finance, Department of Juridical and Economic Studies, Sapienza University of Rome, <https://www.dsge.uniroma1.it/sites/default/files/pubblicazioni/economia/e-pfrp60.pdf>
- Castaldo, A., Germani, A. R., Marrocco, A. **Forti, M.**. 2022. "Drivers and frictions of workplace accidents: an empirical investigation of cross-country European heterogeneity.", *Public Finance Research Papers*, n. 55 – Institute of Economics and Finance, Department of Juridical and Economic Studies, Sapienza University of Rome, <https://www.dsge.uniroma1.it/sites/default/files/pubblicazioni/economia/e-pfrp55.pdf>
- Forti M.**. 2022. "Dynamic Factor Models: improvements and applications". PhD Thesis: <http://hdl.handle.net/11573/1613357>.
- Barili F., D'Errigo P., Rosato S., Biancari F., **Forti M.**, Pagano E., Baglio G., Badoni G., Parolari A., Seccareccia F. 2022. "Ten-year outcomes after off-pump and on-pump coronary artery bypass grafting: an inverse probability of treatment weighting comparative study" - *Journal of cardiovascular medicine* (DOI: 10.2459/jcm.0000000000001323, PMID: 35645027).
- Castaldo, A., Germani, A. R., Marrocco, A. **Forti, M.**. 2022. "La sicurezza sul lavoro in Italia: un'analisi esplorativa.", *Public Finance Research Papers*, n. 56 – Institute of Economics and Finance, Department of Juridical and Economic Studies, Sapienza University of Rome, <https://www.dsge.uniroma1.it/sites/default/files/pubblicazioni/economia/e-pfrp56.pdf>
- Cerza F., Cicala S. D., Bernardini F., **Forti, M.**, Guglielmi E., Fortino A., Mantoan D., Baglio G.. 2022. "Relationship between hospital volumes and health outcomes: epidemiological evidence supporting the revision process of the Ministry of Health Decree no. 70 of 2 April 2015, *Recenti Progressi in Medicina* - 2022;113(2):114-122, DOI 10.1701/3748.37315
- Barili F., D'Errigo P., Rosato S., Biancari F., **Forti M.**, Pagano E., Baglio G., Badoni G., Parolari A., Seccareccia F. 2021. "Impact of gender on 10-Year outcomes after coronary artery bypass grafting, *Interactive CardioVascular and Thoracic Surgery* – EURHEARTJ-D-20-05281, doi:10.1093/icvts/ivab125
- Barili F., D'Errigo P., Rosato S., Biancari F., **Forti M.**, Evangelista A., D'Ovidio M., Parolari A., Gellini M., Borsellino L. Grossi C. Rosato F. Parolari A. Seccareccia F. 2021. "PRedict long term Outcomes after Isolated coronary artery bypass surgery" Software: <https://www.outcomeresearch.it/PRIORITY/>
- Baglio G., Cerza F., Cicala S. D., Cuomo M., **Forti M.**, Giordani B., Mencancini C., Sferrazza A., D'Errigo P., Donati S., Manno V., Maraschini A., Rosato S., Seccareccia F. National Program of Evaluation (2021) - the complete set of statistics and indicators published in: <https://pne.agenas.it/>
- Barili F., D'Errigo P., Rosato S., Biancari F., **Forti M.**, Evangelista A., D'Ovidio M., Parolari A., Gellini M., Borsellino L. Grossi C. Rosato F. Parolari A. Seccareccia F. 2021. "Lo studio PRIORITY – "Predicting long-term outcomes after isolated coronary artery bypass surgery" – *Giornale Italiano di Cardiologia* (2021 Vol. 22 N. 1 Gennaio - ISSN:1827-6806)

Basiglini A., Cerza F, Cicala S. D., Cuomo M., **Forti M.**, Giordani B., Mencancini C., Sferrazza A., D'Errigo P., Donati S., Francisci S., Manno V., Maraschini A., Pierannunzio D., Rosato S., Seccareccia F. 2020. "Indicatori PNE: ieri, oggi e domani" – MONITOR - ISSN:2282-5975 vol. 1/2020

Baglio G., Cerza F, Cicala S. D., Cuomo M., **Forti M.**, Giordani B., Mencancini C., Sferrazza A., D'Errigo P., Donati S., Manno V., Maraschini A., Rosato S., Seccareccia F. National Program of Evaluation (2020) - the complete set of statistics and indicators published in: <https://pne.agenas.it/>

Rosano, A., Basiglini A., Cerza F, Cicala S. D., Cuomo M., **Forti M.**, Giordani B., Mencancini C., Sferrazza A., D'Errigo P., Donati S., Manno V., Maraschini A., Rosato S., Seccareccia F. National Program of Evaluation (2019) - the complete set of statistics and indicators published in: <https://pne.agenas.it/>

Forti M.. 2018. "Redditi, povertà e disuguaglianze tra crisi e ripresa produttiva". Il mulino - Chap. 6. ISBN: 978-88-15-27989-7

Forti M.. 2017. "Disuguaglianza e povertà: dal Reddito di Inclusione al Reddito di Cittadinanza". Il mulino - Chap. 6. ISBN: 9788815273543

IN REVIEW

Marrocco, A.; Castaldo, A.; **Forti, M.** "The Effect of Occupational Safety and Health Investment Policies on Firm Survival"

Nigri, A.; **Forti, M.**; Hanlin, S. "Extending finite mixture models with skew-normal distributions and hidden Markov models for time series"

Alaimo, L.; **Forti, M.**; Nigri, A. "Location-Scale-Shape Modeling via Mixture of Skew Normal Distributions: Application to Health Data"

Salustri, A.; **Forti, M.** "Latina's Proximity Tourism: A Multidimensional Analysis"

IN PREP

3-way functional data analysis clustering

Advancements to spatial modelling in compositional data fuzzy cluster analysis

Financial Shock propagation in the Swiss banking industry: a new econometric approach to model spatial interaction.

Modelling difference in count data leveraging Skellam distributions and hidden Markov models for time series

Mixed type variable in L_0 penalised membership FKM to group within effect

Trimodal skew-normal regression

Functional Data Analysis and Dynamic Factor Model: a forecasting horse race on US data

REFeree ACTIVITIES

ANnals of Operations Research (ANOR)

Journal of Applied Statistics: Environmental Statistics and Data Science

Quality & Quantity

Awards, Fellowships, & Grants _____

- Evaluation strategies to contrast university drop-out through empowerment and to design educational and career guidance practices” (“Strategie di valutazione per contrastare l’abbandono universitario attraverso l’empowerment e per progettare pratiche di orientamento formativo e professionale”), PRIN 2022 PNRR (code P2022XYN9A – CUP D53D23020530001), Prof. Andrea Nigri
- 2024
- From 2024 **Member of the Italian Statistical Society (SIS),**
Commendation - For the “competence and the professionalism expressed” in the sphere of
 2020 **the activities that brought to the publication of 2019 edition of National Program of Evaluation (Programma Nazionale Esiti), AGENAS**
 2014 **Particolarmente meritevole - For the Mortara scholarship aimed to pursue the studies in Mathematics, Statistics and Econometrics, Bank of Italy**

Presentations and events

PRESENTATIONS AS INVITED AUTHOR

SIS DIAS – Data, Indicators and Analysis for Sustainability - Conference on Sustainability Analysis on Measuring Change for a Resilient Future ICSA 2025, Florence, Italy

CONTRIBUTED PRESENTATIONS

Forti M., Nigri A. Hanlin S. “Skew-normal finite mixture models for change-point detection in time series” – IES 2025 - Innovation & Society: Statistics and Data Science for Evaluation and Quality (IES 2025), Bressanone, Italy

Giordani P., Ferraro M. B. **Forti M.**, Nigri A. “Fuzzy clustering with L0 penalization for mixed-type data” – 8th International Conference on Econometrics and Statistics (EcoSta 2025), Tokyo, Japan.

Giordani P., Ferraro M. B. **Forti M.** “FKML0: a Matlab routine for sparse fuzzy clustering” – FUZZ-IEEE World Congress on Computational Intelligence (IEEE WCCI 2024), Yokohama, Japan

Forti M., Ferraro M. B., Giordani P. “L₀-penalized membership in sparse fuzzy clustering” – SIS (LII Annual meeting), Bari, Italy (2024)

Castaldo A., Germani A. R., Marrocco A., **Forti M.** 2021. “Drivers and Frictions of Occupational Accidents: an Empirical Investigation on European and Italian Territorial Heterogeneity” – AISRE XLII Annual conference

Forti M., Cerza F., Cicala S. D., D’Errigo P., Rosato S., Manno V. 2020. “Trends in mortality and heart failure after acute myocardial infarction in Italy from 2007 to 2017” – Poster exposed at 16th World congress on Public Health

Forti M., Cerza F., Cicala S. D., D’Errigo P., Rosato S., Manno V. 2020. “Bilateral internal thoracic artery grafting in coronary surgery: 10-year outcomes” – Poster exposed at 16th World congress on Public Health

Forti M., Cerza F., Cicala S. D., D’Errigo P., Rosato S., Manno V. 2020. “Health performance evaluation of the Italian hospital care system” – Poster exposed at 16th World congress on Public Health

Forti M., Cerza F., Cicala S. D., D’Errigo P., Rosato S., Manno V. 2020. “Hospital management of patients with acute coronary syndrome: influence of age and gender” – Poster exposed at 16th World congress on Public Health

ORGANISED EVENTS

May 2023 - Un nuovo policy mix per la Salute e Sicurezza del Lavoro: l’evoluzione del quadro giuridico e le iniziative di sostegno agli investimenti - Convegno organizzato nell’ambito delle attività di disseminazione del Progetto INAIL Bric 2019