

Mario Fordellone

Contact

[Google Scholar](#) – [Cineca IRIS](#) – [ORCID](#) – [Github](#)

Actual working positions

Postdoctoral Research fellow in **Medical Statistics**
Scientific disciplinary sector **MED/01**
Dipartimento di Salute Mentale e Fisica e Medicina Preventiva,
Univeristà degli Studi della Campania “Luigi Vanvitelli”

Research interests

Multidimensional Analysis, joint methods for dimensionality reduction and clustering, cluster modeling, supervised and unsupervised classification, partial least squares regression, non-linear regression, fuzzy clustering, high-dimensional data analysis, structural equation modeling, path modeling, imprecise data analysis, fuzzy data classification, interval-valued data analysis.

Previous working positions

April 2021 - March 2022
Postdoctoral Research fellow in Medical Statistics
Scientific disciplinary sector **MED/01**
Dipartimento di Salute Mentale e Fisica e Medicina Preventiva,
Univeristà degli Studi della Campania “Luigi Vanvitelli”
Topic: *Interrelationships among inflammation, physical symptoms, mental symptoms and quality of life in subjects with chronic inflammatory physical diseases.*
Advisor: **Prof. Paolo Chiodini**

February 2020 - March 2021
Postdoctoral Research fellow in Statistics
Scientific disciplinary sector **SECS-S/01**
Department of Social and Economics Science,
Università degli Studi di Roma “La Sapienza”
Topic: *Fuzzy clustering models for imprecise data*
Advisor: **Prof. Pierpaolo D’Urso**

September 2018 - August 2019

Research fellow in Statistics

Scientific disciplinary sector **SECS-S/01**

Department of Statistical Sciences,

Università degli Studi di Roma “La Sapienza”

Topic: *Sviluppo di uno strumento di analisi finalizzato al monitoraggio degli indicatori ANVUR per l’accreditamento degli Atenei*

Advisor: **Prof. Maurizio Vichi**

October 2015 - August 2018

Ph. D student with Scholarship in Methodological Statistics

Scientific disciplinary sector **SECS-S/01**

Department of Statistical Sciences,

Università degli Studi di Roma “La Sapienza”

Topic thesis: *Dimensionality reduction and simultaneous classification approaches for complex data: methods and applications*

Advisor: **Prof. Maurizio Vichi**

October 2014 - September 2015

Research Fellow, Scientific disciplinary sector **SECS-S/01**

Department of Statistical Sciences,

Università degli Studi di Padova

Topic: *Metodi di costruzione di indicatori compositi e loro utilizzo per la valutazione dell’efficacia di Atenei e Comuni*

Advisor: **Prof. Giovanna Boccuzzo**

March 2014 - September 2014

Research activity, Scientific disciplinary sector **SECS-S/01**

Department of Political Sciences,

Università degli Studi di Napoli “Federico II”

Topic: *Prototypes definition through consensus analysis between Fuzzy c-Means and Archetypal Analysis*

Advisor: **Prof. Francesco Palumbo**

Academic teaching experience

Academic years: **2020/2021**

Course: *Statistica per la ricerca sperimentale*

Scientific disciplinary sector **SECS-S/02**

Bachelor’s Degree in Fisioterapia,

Scuola di Medicina e Chirurgia, Università degli Studi di Napoli “Federico II”

Academic years: **2020/2021**

Course: *Probabilità e Statistica*

Scientific disciplinary sector **MAT/06**

Bachelor’s Degree in Ingegneria Meccanica,

Università degli Studi di Roma “La Sapienza”

Academic years: **2020/2021**
Course: *Laboratorio di Statistica*
Scientific disciplinary sector **AAF**
Bachelor's Degree in Ingegneria Meccanica,
Università degli Studi di Roma "La Sapienza"

Academic years: **2019/2020**
Course: *Introduction to biomedical statistics*
Scientific disciplinary sector **MED/01**
Bachelor's Degree in Bioinformatics,
Università degli Studi di Roma "La Sapienza"

Academic teaching assistance experience
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Academic years: **2020/2021**
Course: *Data analysis laboratory for Economic, Political and Social Sciences*
(**prof. Paolo Perciballi**)
Bachelor's Degree in Political Sciences,
LUISS Guido Carli

Academic years: from **2018/2019** to **2020/2021**
Course: *Statistica*
(**prof. Pierpaolo D'Urso**)
Scientific disciplinary sector **SECS-S/01**
Bachelor's Degree in Scienze Politiche,
LUISS Guido Carli

Academic years: from **2017/2018** to **2020/2021**
Course: *Laboratorio di analisi dei dati economici, politici e delle scienze sociali*
(**prof. Marco Pini**)
Bachelor's Degree in Scienze Politiche, LUISS Independent University of Rome

Academic years: **2019/2020**
Course: *Statistica*
(**prof. Pierpaolo D'Urso**)
Scientific disciplinary sector **SECS-S/01**
Bachelor's Degree in Relazioni Internazionali,
Università degli Studi di Roma "La Sapienza"

Academic years: **2019/2020**
Course: *Statistics and econometrics*
Scientific disciplinary sector **SECS-S/01**
Tutor in Statistics and Econometrics,
LUISS Guido Carli

Academic years: **2018/2019**
Course: *Statistica ed analisi delle serie storiche*
(**prof. Germana Scepi**)
Scientific disciplinary sector **SECS-S/01**
Bachelor's Degree in Economia dei Mercati Finanziari,
Università degli Studi di Napoli "Federico II"

Academic years: from **2016/2017** to **2018/2019**
Course: *Advances in data analysis and statistical modelling*
(**prof. Maurizio Vichi**)
Scientific disciplinary sector **SECS-S/01**
Master's Degree in Statistical Sciences,
Università degli Studi di Roma "La Sapienza"

Academic years: **2016/2017**
Course: *Statistica*
(**prof. Giuseppina Guagnano, Silvia Poletti, Francesco Maria Sanna**)
Scientific disciplinary sector **SECS-S/01**
Bachelor's Degree in Economia Aziendale,
Università degli Studi di Roma "La Sapienza"

Other Teaching experiences

12 June 2017 – 16 June 2017
Lecturer in *Partial Least Squares regression*
Scientific disciplinary sector **SECS-S/01**
Società Italiana Agronomia (SIA)
Ph. D course in: *Generalized Linear Model and Partial Least Squares*

13 November 2017
Contract professor in *Multivariate data analysis and regression modeling*
Scientific disciplinary sector **SECS-S/01**
Bachelor's Degree in Political Sciences (course A)
(prof. Livia De Giovanni)
LUISS Guido Carli

15 November 2017
Contract professor in *Multivariate data analysis and regression modeling*
Scientific disciplinary sector **SECS-S/01**
Bachelor's Degree in Political Sciences (course B)
(prof. Pierpaolo D'Urso)
LUISS Guido Carli

Education

November 2015 – October 2018
Ph. D scholarship in Statistica Metodologica (Scientific disciplinary sector SECS-S/01)
Università degli Studi di Roma "La Sapienza"
Thesis: *Dimensionality reduction and simultaneous classification approaches for complex data: methods and applications*

October 2011 - March 2014
Master's degree in Scienze Statistiche per le Decisioni (110/110 cum laude)
Università degli Studi di Napoli "Federico II"
Thesis: *Definizione dei prototipi attraverso l'analisi del consenso: un approccio congiunto tra l'analisi archetipale ed il metodo delle k-medie sfocato*

October 2008 - October 2011

Bachelor's degree in Statistica (100/110)

Università degli Studi di Napoli "Federico II"

Thesis: *Il value at Risk nel periodo della grande crisi*

Other educational courses

22th May 2017 – 26th May 2017

1st International Summer School on Classification and Data Analysis

Department of Statistical Sciences, **University of Bologna**

Location: Rimini Campus

Publications

Books / monographs

1. Mario Fordellone (2019)
Statistical Analysis of Complex Data: Dimensionality reduction and classification methods
Publisher: *LAP LAMBERT Academic Publishing*
ISBN: 978-620-0-44372-4

Papers in scientific journal (Class A and B**)*

1. Pierpaolo D'Urso, De Giovanni Livia, Mario Fordellone (2020) *
Entropy-based fuzzy clustering model for interval-valued data
Expert System with applications (ESWA)
[Under review – 2° round]
2. Venera Tomaselli, Mario Fordellone, Maurizio Vichi (2020) *
Building Well-Being Composite Indicator for Micro-Territorial Areas Through PLS-SEM and K-Means Approach
Social Indicator Research (SIR)
ISSN: 0303-8300 (print version) – ISSN: 1573-0921 (electronic version) –
DOI: <https://doi.org/10.1007/s11205-020-02454-0>
3. Mario Fordellone, Maurizio Vichi (2020) *
Finding groups in Structural Equation Modeling through the Partial Least Squares algorithm
Computational Statistics & Data Analysis (CSDA)
ISSN: 0167-9473 – DOI: <https://doi.org/10.1016/j.csda.2020.106957>
4. Mario Fordellone, Andrea Bellincontro, Fabio Mencarelli (2019) **
Partial Least Squares Discriminant Analysis: a dimensionality reduction method to classify real hyperspectral data
Italian Journal of Applied Statistics – Vol. 31 (2) pp. 181-200
ISSN: 1125-1964 (print version) – ISSN: 2038-5587 (electronic version)
DOI: <https://doi.org/10.26398/IJAS.0031-010>

5. Mario Fordellone, Venera Tomaselli, Maurizio Vichi (2018) **
From tandem to simultaneous dimensionality reduction and clustering of tourism data
Italian Review of Economics, Demography and Statistics – Vol. 72 (1) pp. 5-16
 ISSN: 0035-6832
6. Mario Fordellone, Francesco Palumbo (2016) **
Prototypes definition through Consensus Analysis between Fuzzy c-Means and Archetypal Analysis
Italian Journal of Applied Statistics – Vol. 26 (2) pp. 141-162
 ISSN: 1125-1964 (print version) – ISSN: 2038-5587 (electronic version)

Chapters in books

1. Venera Tomaselli, Mario Fordellone, Maurizio Vichi (2020)
Modeling Well-Being through PLS-SEM and K-Means
Book of Short Papers SIS 2020 Published by Pearson pp. 1513-1518
 ISBN: 9788891910776
2. Venera Tomaselli, Mario Fordellone, Maurizio Vichi (2020)
Construction of an Immigrant Integration Composite Indicator Through the Partial Least Squares Structural Equation Model K-Means
Data Science and Social Research II
 ISBN: 978-3-030-51221-7 / DOI: 10.1007/978-3-030-51222-4_28
3. Mario Fordellone, Venera Tomaselli, Maurizio Vichi (2019)
A new proposal for building immigrant integration composite indicator
Book of Short Papers CLADAG 2019 pp. 199-202
 ISBN 978-88-8317-108-6
4. Mario Fordellone, Maurizio Vichi (2018)
Simultaneous unsupervised and supervised classification modeling for clustering, model selection and dimensionality reduction
Book of Short Papers SIS 2018 Published by Pearson pp. 1435-1441
 ISBN: 978-88-91910-23-3
5. Mario Fordellone, Maurizio Vichi (2017)
Simultaneous supervised and unsupervised classification modeling for assessing cluster analysis and improving results interpretability
Statistical Learning of Complex Data (Selected papers) pp. 23-31
 ISBN: 978-3-030-21140-0
6. Mario Fordellone, Maurizio Vichi (2017)
Clustering and Structural Equation Modeling
Universitas Studiorum. Zenga Editors
 ISBN: 978-88-99459-71-0
7. Mario Fordellone, Maurizio Vichi (2017)
Multiple Correspondence K-Means: Simultaneous Versus Sequential Approach for Dimension Reduction and Clustering
Data Science and Social Research pp. 81-95
 ISBN: 978-3-319-55476-1 / DOI: 10.1007/978-3-319-55477-8_8

8. Mario Fordellone, Francesco Palumbo (2017)
Finding Prototypes Through a Two-Step Fuzzy Approach
Data Science pp. 111-121
ISSN: 1431-8814 (print version) / ISSN: 2198-3321 (electronic version)
ISBN: 978-3-319-55722-9 / DOI: 10.1007/978-3-319-55723-6

Working papers and technical reports

1. Mario Fordellone (2019)
Dimensionality reduction and simultaneous classification approaches for complex data: methods and applications
Dipartimento di Scienze Statistiche, Università di Roma LA SAPIENZA
https://iris.uniroma1.it/retrieve/handle/11573/1315683/1254754/Tesi_dottorato_Fordellone.pdf
2. Mario Fordellone, Andrea Bellincontro, Fabio Mencarelli (2018)
Partial Least Squares Discriminant Analysis: a dimensionality reduction method to classify real hyperspectral data
ISSN: 2279-798X *Dipartimento di Scienze Statistiche, Università di Roma LA SAPIENZA*
<http://www.dss.uniroma1.it/it/node/7282>
3. Mario Fordellone, Maurizio Vichi (2018)
Simultaneous supervised and unsupervised classification modeling for assessing cluster analysis and improving results interpretability
ISSN: 2279-798X *Dipartimento di Scienze Statistiche, Università di Roma LA SAPIENZA*
<http://www.dss.uniroma1.it/it/node/7320>
4. Mario Fordellone, Maurizio Vichi (2018)
Structural Equation Modeling and simultaneous clustering through the Partial Least Squares algorithm
ISSN: 2279-798X *Dipartimento di Scienze Statistiche, Università di Roma LA SAPIENZA*
<http://www.dss.uniroma1.it/it/node/7277>
5. Mario Fordellone, Giovanna Boccuzzo (2015)
Comments about the use of PLS path modeling in building a Job Quality Composite Indicator
Working Paper Series, N. 2, June 2015 (University of Padua:
<http://paduaresearch.cab.unipd.it/8841/>

International Conference

1. Venera Tomaselli, Mario Fordellone, Maurizio Vichi
Modeling Well-Being through PLS-SEM and K-Means
49th Scientific meeting of the Italian Statistical Society (SIS)
22-24 June 2020, University of Pisa Sant'Anna (Italy)
2. Mario Fordellone, Venera Tomaselli, Maurizio Vichi
A composite indicator to measure immigrant integration by a PLS-SEM-KM method
12th Classification and Data Analysis Group (CLADAG)
11-13 September 2019, University of Cassino (Italy)

3. Venera Tomaselli, Mario Fordellone, Maurizio Vichi
Building well-being profiles in territorial areas through a k-means approach in the partial least squares path modelling
56th Scientific Conference
22-24 May 2019, University of Ascoli Piceno (Italy)
4. Mario Fordellone, Venera Tomaselli, Maurizio Vichi
A composite indicator to measure immigrant integration by a PLS-SEM-KM method
13th Edition of Population Days
24-26 January 2019, University of Milano “Bocconi” (Italy)
5. Mario Fordellone, Venera Tomaselli, Maurizio Vichi
Simultaneous clustering and dimensionality reduction in a PLS-SEM approach: a composite indicator to measure immigrant integration
Workshop on High Dimensional Small Data
19-20 October 2018, University of Venice (Italy)
6. Mario Fordellone, Maurizio Vichi
Improving clustering assessment through supervised classification modeling
Workshop on Model-Based Clustering and Classification (MBC²)
5-7 September 2018, University of Catania (Italy)
7. Mario Fordellone, Maurizio Vichi
Simultaneous unsupervised and supervised classification modeling for clustering, model selection and dimensionality reduction
49th Scientific meeting of the Italian Statistical Society (SIS)
20-22 June 2018, University of Palermo (Italy)
8. Mario Fordellone, Maurizio Vichi
Clustering and Structural Equation Modeling
11th Classification and Data Analysis Group (CLADAG)
13-15 September 2017, University of Milano-Bicocca (Italy)
9. Mario Fordellone, Maurizio Vichi, Raffaele Casa, Andrea Bellincontro, Fabio Mencarelli
Classifying olive fruits using Partial Least Squares Discriminant Analysis on high dimensional hyperspectral data
Stat Food2017 Conference
7-9 September 2017, University of Naples (Italy)
10. Mario Fordellone, Venera Tomaselli, Maurizio Vichi
La riduzione dimensionale dei dati Sul metodo di segmentazione simultanea: analisi della domanda turistica
54ma Riunione Scientifica della Società Italiana di Economia, Demografia e Statistica (SIEDS)
25-26 May 2017, Università degli Studi di Catania (Italy)
11. Mario Fordellone, Maurizio Vichi
Multiple Correspondence K-Means: a new approach for dimension reduction and clustering
Data Science and Social Research
17-19 February 2016, Federico II University of Naples (Italy)

12. Mario Fordellone, Giovanna Boccuzzo
Building composite indicators through PLS path modeling: comparison between formative and reflective approach for the construction of a job quality indicator
Dealing with complexity in society: from plurality of data to synthetic indicators
17-18 September 2015, University of Padua (Italy)
13. Mario Fordellone, Francesco Palumbo
Set-valued prototypes through Consensus Analysis
International Federation of Classification Societies
6-8 July 2015, University of Bologna (Italy)

Grant

2020

Funded research project in: *Analysis of rankings and preference data: new methods and applications*

Department of Social and Economic Sciences, **Università degli Studi di Roma “La Sapienza”**

Project manager: **Roy Cerqueti**

Qualification: **research team component**

2017

Funded research project in: *Risk Management in commodity, energy and financial markets: new challenges*

Department of Statistical Sciences, **Università degli Studi di Roma “La Sapienza”**

Project manager: **Rita Laurea D’Ecclesia**

Qualification: **research team component**

2017 (PRIN)

Funded research project in: *Challenges in Latent Variable Models and Multivariate Methods for Complex, High-dimensional Data: Specification, Inference and Statistical Scalability Issues*

Department of Statistical Sciences, **Università degli Studi di Roma “La Sapienza”**

Project manager: **Marco Alfò**

Qualification: **research team component**

2016

Funded research project in: *Model-Based Composite Indicators and Dimensionality Reduction for Big Data Analysis*

Department of Statistical Sciences, **Università degli Studi di Roma “La Sapienza”**

Project manager: **Maurizio Vichi**

Qualification: **research team component**

Awards

Rassegna Economica 2017 – IV classificato

Project theme: *Le caratteristiche competitive e le dinamiche evolutive della Maritime Economy in Italia e nel Mezzogiorno.*

Contribution title: *La Circular Economy come una green strategy per il profondo blu del Mezzogiorno.*

Played role: **Statistical analysis**

Reviewer of scientific research journals (Classes A* and B**)

1. Japanese Journal of Statistics and Data Science (JJSD)**
(<https://www.springer.com/journal/42081>)
2. Italian Journal of Planning Practice (IJPP)**
(<http://www.ijpp.it/index.php/it>)
3. Information Sciences Journal (INS)*
(<https://www.journals.elsevier.com/information-sciences>)
4. Advances in Data Analysis and Classification (ADAC)*
(<https://link.springer.com/journal/11634>)
5. Social Indicator Research (SIR)*
(<https://www.springer.com/journal/11205>)
6. Soft Computing Letters (SCL)*
(<https://www.journals.elsevier.com/soft-computing-letters>)
7. Metron (TRON)**
(<https://www.springer.com/journal/40300>)
8. Expert System With Application (ESWA)*
(<https://www.journals.elsevier.com/expert-systems-with-applications>)
9. SN Business & Economics (SNBE)*
(<https://www.springer.com/journal/43546>)
10. International Journal of Human Anatomy (IJHA)*
(<https://openaccesspub.org/journal/ijha>)
11. Transportation Research Part A (YTRA)*
(<https://www.journals.elsevier.com/transportation-research-part-a-policy-and-practice>)

Language skills

Italian: mother tongue
English: B2 level

Computer skills

- Operating system: Windows, Macintosh OS X
- Software: Microsoft Office, Adobe
- Programming: R, MatLab, Octave, SAS, Python, WinBugs, Latex

In compliance with the Italian Legislative Decree no. 196 dated 30/06/2003, I hereby authorize you to use and process my personal details contained in this document

Autorizzo la pubblicazione del mio curriculum vitae e il trattamento dei dati personali in esso contenuti in base all'art. 13 del D. Lgs. 196/2003 e all'art. 13 GDPR 679/16

