

Mario Fordellone

Actual working positions

Teacher in **Introduction to biomedical statistics**
Scientific disciplinary sector **MED/01**
Department of Molecular Medicine, Sapienza University of Rome

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.

Previous working positions

September 2018 - August 2019
Research fellow in Statistics
Scientific disciplinary sector **SECS-S/01**
Department of Statistical Sciences, Sapienza University of Rome
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 Methodical Statistics
Scientific disciplinary sector **SECS-S/01**
Department of Statistical Sciences, Sapienza University of Rome
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, University of Padua
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, Federico II University of Naples

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

Advisor: **Prof. Francesco Palumbo**

Academic teaching experience

Academic years: **2019/2020 to present (1 year)**

Course: *Introduction to biomedical statistics*

Scientific disciplinary sector **MED/01**

Bachelor's Degree in Bioinformatics, Sapienza University of Rome

Academic teaching assistance experience

Academic years: **2019/2020 to present (1 year)**

Course: *Statistics and econometrics*

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

Statistics and econometrics, LUISS Independent University of Rome

Academic years: from **2018/2019 to present (2 years)**

Course: *Statistics*

(**prof. Pierpaolo D'Urso**)

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

Bachelor's Degree in Political Sciences, LUISS Independent University of Rome

Academic years: from **2017/2018 to present (3 years)**

Course: *Data analysis laboratory for Economic, Political and Social Sciences*

(**prof. Marco Pini**)

Scientific disciplinary sector

Bachelor's Degree in Political Sciences, LUISS Independent University of Rome

Academic years: from **2018/2019 to present (2 years)**

Course: *Statistics and time series analysis*

(**prof. Germana Scepi**)

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

Bachelor's Degree in Economics of financial business, Federico II University of Naples

Academic years: from **2016/2017 to 2018/2019 (3 years)**

Course: *Advances in data analysis and statistical modelling*

(**prof. Maurizio Vichi**)

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

Master's Degree in Statistical Sciences, Sapienza University of Rome

Academic years: **2016/2017 (1 year)**

Course: *Statistics*

(**prof. Giuseppina Guagnano, Silvia Poletti, Francesco Maria Sanna**)

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

Bachelor's Degree in Business Economics, Sapienza University of Rome

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 Independent University of Rome

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 Independent University of Rome

Education

November 2015 – October 2018

Ph. D scholarship in Methodological Statistic (Scientific disciplinary sector SECS-S/01)

Department of Statistical Sciences, Sapienza University of Rome

October 2011 - March 2014

Master's degree in Statistical Sciences (110/110 cum laude)

Federico II, University of Naples

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 Statistics (100/110)

Federico II, University of Naples

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

Other 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 (Classes A and B**)*

1. Venera Tomaselli, Mario Fordellone, Maurizio Vichi (2020) *
Building well-being composite indicator for micro-territorial areas through the PLS-SEM K-means approach
Social Indicator Research (SIR)
[Under review]
2. Venera Tomaselli, Mario Fordellone, Maurizio Vichi (2020) *
Migrant Integration: A Composite Measurement of a Multidimensional Concept
International Migration Review (IMR)
[Under review]
3. Mario Fordellone, Maurizio Vichi (2020) *
Finding groups in Structural Equation Modeling through the Partial Least Squares algorithm
Computational Statistics and Data Analysis (CSDA)
[Final decision in progress]
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
[Accepted]
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. 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
2. 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
3. Mario Fordellone, Maurizio Vichi (2017)
Simultaneous supervised and unsupervised classification modeling for assessing cluster analysis and improving results interpretability
Springer Book of Cladag2017 (Selected papers) pp. 23-31
ISBN: 978-3-030-21140-0
4. Mario Fordellone, Maurizio Vichi (2017)
Clustering and Structural Equation Modeling
Universitas Studiorum. Zenga Editors
ISBN: 978-88-99459-71-0
5. 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
6. Mario Fordellone, Francesco Palumbo (2017)
Set-valued prototypes through Consensus Analysis
Data Science, Innovative Developments in Data Analysis and Clustering 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. 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)
2. 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)
3. 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)
4. 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)
5. 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)

6. 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)

7. 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)

8. 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)

9. Mario Fordellone, Venera Tomaselli, Maurizio Vichi
La riduzione dimensionale dei dati Sul metodo di segmentazione simultanea: analisi della domanda turistica
 54^{ma} Riunione Scientifica della Società Italiana di Economia, Demografia e Statistica (SIEDS)
 25-26 May 2017, Università degli Studi di Catania (Italy)

10. 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)

11. 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)

12. Mario Fordellone, Francesco Palumbo
Set-valued prototypes through Consensus Analysis
 International Federation of Classification Societies
 6-8 July 2015, University of Bologna (Italy)

Grants

2016 - 2017

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

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>)
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Professional consulting

Si. Camera – Sistema Camerale Servizi S.C.R.L.

Statistical report in: *Analisi Statistica Imprese 4.0*”

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
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