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Decreto Rettore Università di Roma "La Sapienza" n. **1828/2018** del **12/07/2018**

Place Roma
Date 27/08/2018

Ai Fini della pubblicazione
Part II – Education

Type	Year	Institution	Notes (Degree Experience,...)
University graduation BSc in Economics & Finance	2009	Università degli Studi di Roma "Tor Vergata"	110/110 cum summa laude Dissertation title: A logit model to estimate the probability of default. Supervisor: Prof. Roberto Rocci
University graduation MSc	2011	Università degli Studi di Roma "Tor Vergata"	110/110 cum summa laude with honors Dissertation title: A mixture Gaussian Hidden Markov model: a flexible approach to analyze heterogeneous returns. Supervisor: Prof. Roberto Rocci
Post-graduate studies	2012	Warwick University (UK)	With Distinction Dissertation title: Modelling skewed data. Supervisor: Prof. Mark Steel
PhD	2014	Università Sapienza	Dissertation title: New perspective on likelihood-based inference for latent and observed Gaussian mixture models. Advisor: Prof. RobertoRocci

Part III – Appointments

IIIA – Academic Appointments

Start	End	Institution	Position
3/4/18	2/4/21	Dipartimento di Economia e Finanza - Università degli Studi di Roma "Tor Vergata"	RTDA SECS-S/01 13/D1
3/4/17	31/3/18	Dipartimento di Scienze Politiche – Università Roma Tre	Assegno di Ricerca SECS-S/01 13/D1
1/10/15	30/9/16	Dipartimento di Scienze Politiche – Università Roma Tre	Assegno di Ricerca SECS-S/01 13/D1
12/1/15	11/1/16	Dipartimento di Statistica – Penn State	Post-Doc SECS-S/01 13/D1

University (USA)

Part IV – Teaching experience as Instructor

Year	Institution	Lecture/Course
Fa 2018	Università degli Studi di Roma Tor Vergata – Department of Economics and Finance	Statistical Tools for Decision-Making (7 CFU; Descriptive statistics, Introduction to Probability and Inferential Statistics). Undergraduate course in English.
Su 2018	Università degli Studi di Roma Tor Vergata– Department of Economics and Finance	Introduction to Statistics (20 h). Preparatory course in English at Master of Science in European Economy and Business Law.
Sp 2018	Università Roma Tre– Department of Political Sciences	Statistics. Undergraduate course in Italian (8 CFU)
Fa 2017	Università degli Studi di Roma Tor Vergata– Department of Economics and Finance	Statistical Tools for Decision-Making (3 CFU; Descriptive statistics). Undergraduate course in English.
Su 2017	Università degli Studi di Roma Tor Vergata– Department of Economics and Finance	Introduction to Statistics. Preparatory course in English at Master of Science in European Economy and Business Law. (12 h)
Sp 2017	Università Roma Tre– Department of Political Sciences	Statistics. Undergraduate course in Italian (8 CFU)
Sp 2016	Università degli Studi di Roma Tor Vergata– Department of Economics and Finance	Marketing Analytics Lab. Course in English at Master of Science in Big Data in Business (Co-Instructor with Prof. Roberto Rocci)
Fa 2015	Penn State University (USA) – Department of Statistics	STAT462 Applied Regression Analysis. Undergraduate Course in English.

(Please see Student Rating of Teaching Effectiveness in attachment)

Part IV – Teaching experience as Teaching Assistant

Year	Institution	Lecture/Course
Fa 2018	Università degli Studi di Roma Tor Vergata– Department of Economics and Finance	Statistical Tools for Decision-Making. Undergraduate course in English. Course instructors: Dr. Monia Ranalli (7 CFU); Prof. Roberto Rocci (2 CFU)
Fa 2018	LUISS – Department of Political Sciences	Statistics. Undergraduate course in English. Instructor: Prof. Roberto Rocci (8 CFU)
Sp 2018	LUISS – Department of Economics and Finance	Statistics. Undergraduate course in English. Instructor: Dr. Alessio Troiani (8 CFU)
Sp 2018	Università degli Studi di Roma Tor Vergata– Department of Management and Law	SAS Labs for Business Statistics. Graduate course in English. Course Instructor: Prof. Simone Borra (6 CFU)

Fa 2017	Università degli Studi di Roma Tor Vergata–Department of Economics and Finance	Statistics. Course in English at Master in Development Economics and International Cooperation. Course instructor: Prof. Roberto Rocci
Fa 2017	LUISS – Department of Political Sciences	Statistics. Undergraduate course in English. Instructor: Prof. Roberto Rocci (8 CFU)
Fa 2017	Università degli Studi di Roma Tor Vergata–Department of Economics and Finance	Statistical Tools for Decision-Making. Undergraduate course in English. Course instructors: Dr. Monia Ranalli (3 CFU); Prof. Roberto Rocci (6 CFU)
Sp 2017	LUISS – Department of Economics and Finance	Statistics. Undergraduate course in English. Instructor: Prof. Brunero Liseo (8 CFU)
Sp 2017	Università degli Studi di Roma Tor Vergata–Department of Management and Law	SAS Labs for Business Statistics. Graduate course in English. Course Instructor: Prof. Simone Borra (6 CFU)
Fa 2016	LUISS – Department of Political Sciences	Statistics. Undergraduate course in English. Instructor: Prof. Roberto Rocci (8 CFU)
Fa 2016	Università degli Studi di Roma Tor Vergata–Department of Economics and Finance	Statistics. Course in English at Master in Development Economics and International Cooperation. Course instructor: Prof. Roberto Rocci
Sp 2016	LUISS – Department of Economics and Finance	Statistics. Undergraduate course in English. Instructor: Prof. Yosef Rinott (8 CFU)
Sp 2016	Università degli Studi di Roma Tor Vergata–Department of Economics and Finance	Lab activities for Unsupervised Learning. Graduate course in English for MSc in Big Data in Business. Instructor: Prof. Roberto Rocci
Fa 2013	Università degli Studi di Roma Tor Vergata–Department of Economics and Finance	Statistics. Undergraduate course in Italian. Prof. Stefano Antonio Gattone (9 CFU)

Part V - Society memberberships, Awards and Honors

Year	Title
2017	Grant of 500 Euro for accommodation and traveling to attend 2017 CRoNoS Winter Course on Copula-based modeling with R at Birkbeck University of London. (Course Instructors: Prof. Marius Hofert, University of Waterloo, Canada, and Prof. Ivan Kojadinovic, University of Pau, France.)
2016	Best Ph.D. Thesis in Statistics in Italy, awarded by Italian Statistical Societ
2015	Honorable Mention at 2015 Shiny Contest organized by Department of Statistics - Penn State - for Snapshot of Statistical Inference: Point Estimation, Interval Estimation, Hypothesis Testing (in collaboration with Debmalya Nandy).
2011	Departmental Bursary for an MSc in Statistics at the University of Warwick
	Society Memberships: Member of SIS (Italian Statistical Society), Member of MM (Mixture models), a specialized team of CMStatistics (Computational and Methodological Statistics), Member of the Classification Society.

Part VI - Funding Information [grants as PI-principal investigator or I-investigator]

Year	Title	Program	Grant value
2018	Environmental processes and human	Partecipation to Research	

	ctivities: capturing their interactions via statistical methods (EphaStat)	Project (local PI: Jona Lasinio, G)	
2014	Dynamic Latent Mixture Model for longitudinal ordinal data	Co-Principal Investigator (with Marino, M.F.), Avvio alla ricerca grant (Young Investigator grant), Sapienza University.	2000
2014	Biclustering using a fuzzy approach	Partecipation to Research Project (PI Ferraro, MB)	

Part VII – Research Activities

Keywords	Brief Description
Mixture Models	- **Finite mixture models** (and some extensions) used mainly for a **clustering** purpose
Composite Likelihood	- **Methodological aspects** mainly focused on finite mixture models (the **unboundedness** of the likelihood for mixture of Gaussians, **identifiability issues** of mixture models based on an URV approach along with composite likelihood function
Latent Variable Models	- **Estimation methods** based on **composite likelihood** and **Monte Carlo likelihood**
EM algorithm	
Ordinal data	- **Different real data applications** (ChIP-seq data, marine currents, wildfires, social and behavioral data, time series, three-way data)

Part VIII – Summary of Scientific Achievements

Product type	Number	Data Base	Start	End
Papers	6	Google Scholar	2016	Today
Published Thesis	1	Google Scholar	2014	Today
Chapters in Volume	2	Google Scholar	2015	
Proceedings	4	Google Scholar	2013	Today
Abstracts	1	Google Scholar	2014	Today
Pre-prints	2	Google Scholar	2015	Today
Discussion	1	Google Scholar	2015	Today

Total Impact factor	9.078
Total Citations	14
Average Citations per Product	14/6=2.33
Hirsch (H) index	2

Normalized H index*	1

*H index divided by the academic seniority.

Part IX– Selected Publications

List of the publications selected for the evaluation. For each publication report title, authors, reference data, journal IF (if applicable), citations, press/media release (if any).

1. **Ranalli, M.,** Lindsay, B.G., and Hunter, D. (2018) "A classical invariant solution to the normal mixture problem". Statistica Sinica. doi:10.5705/ss.202016.0483 (see also acceptance letter in attachment) – **IF=0.886**
   (Allegato A)
2. Ameijeiras-Alonso J, Lagona F, **Ranalli M**, Crujeiras RM (2018). A circular non-homogeneous hidden Markov field for the spatial segmentation of wildfire occurrences. ENVIRONMETRICS, ISSN: 1180-4009, doi: 10.1002/env.2501 – **IF=1.321**
   (Allegato B)
3. **Ranalli, M.,** Lagona, F., Picone, M., Zambianchi, E. (2018). Segmentation of sea current fields by cylindrical hidden Markov models: A composite likelihood approach. JOURNAL OF THE ROYAL STATISTICAL SOCIETY SERIES C-APPLIED STATISTICS, vol. 67, p. 575-598, ISSN: 0035-9254, doi: 10.1111/rssc.12240 – **IF=1.75 #Citations=1**
   (Allegato C)
4. **Ranalli M**, Rocci R (2017). A model based approach to simultaneous clustering and dimensional reduction of ordinal data. PSYCHOMETRIKA, vol. 82, p. 1007-1034, ISSN: 0033-3123, doi: https://doi.org/10.1007/s11336-017-9578-5 - **IF=2.089**
   (Allegato D)
5. **Ranalli M**, Rocci R (2017). Mixture models for mixed-type data through a composite likelihood approach. COMPUTATIONAL STATISTICS & DATA ANALYSIS, vol. 110, p. 87-102, ISSN: 0167-9473, doi: https://doi.org/10.1016/j.csda.2016.12.016 - **IF=1.181 #Citations=3**
   (Allegato E)
6. **Ranalli M**, Rocci R (2016). Mixture Models for Ordinal Data: A Pairwise Likelihood Approach. STATISTICS AND COMPUTING, vol. 26, p. 529-547, ISSN: 0960-3174, doi: https://doi.org/10.1007/s11222-014-9543-4 - **IF=1.851 #Citations=10**
   (Allegato F)
7. **Ranalli M** (in press). New perspectives on likelihood-based inference for latent and observed Gaussian mixture models. In: Best Ph.D. Theses in Statistics and Applications. SIS-CLEUP.
   (Allegato G)
8. **Ranalli M**, Rocci R (2016). Standard and novel model selection criteria in the pairwise likelihood estimation of a mixture model for ordinal data. In: (a cura di): Wilhelm, A.F.X. and Kestler, H. A. , Studies in Classification, Data Analysis, and Knowledge Organization. Analysis of Large and Complex Data. p. 53-68, ISBN: 9783319252247 #Citations=4
   (Allegato H)
9. **Ranalli M**, Rocci R (2015). Clustering methods for ordinal data: a comparison between standard and new approaches. In: (a cura di): Morlini, I., Minerva, T. and Vichi, Studies in Classification, Data Analysis, and Knowledge Organization . Advances in Statistical Models for Data Analysis. p. 221-229, doi: DOI 10.1007/978-3-319-17377-1
   (Allegato I)

10. Lagona, F, Ranalli, Monia (2018, in press). A multilevel hidden Markov model for space-time cylindrical data. SIS 2018 "Book of short papers". ISBN: TBA (see attachment – copyright signed for publication)
    (Allegato L)
11. Rocci R, Vichi, M, **Ranalli, M** (2017). Mixture models for simultaneous classification and reduction of three-way data. In: Cladag 2017 Book of Short Papers. ISBN: 9788899459710 ,
    (Allegato M)
12. **Ranalli M**, Rocci R (2013). Mixture models for ordinal data: a pairwise likelihood approach. In: (a cura di): Tommaso Minerva, Isabella Morlini, Francesco Palumbo, Cladag 2013. 9th Meeting of the Classification and Data Analysis Group. Book of Abstracts. p. 396-399, ISBN: 9788867871179
    (Allegato N)

Part X– Other Details
Educational Activities
MSc degrees supervised
1. Dario Scalzo (MSc in Big Data, Tor Vergata University) Jan 2017
2. Matteo Tamburri (MSc in Big Data, Tor Vergata University) Jan 2017

Editorial Work Reviewer
Metron, ADAC, CSDA, and Statistics and Computing, Journal of Statistical Computation and Simulation

Invited Research Stays
Ghent University (Belgium). Host: Dr. Christopher Ley Sep 2017

Chair Sessions & Organized Sessions
1. Session Flexible modeling organized at COMPSTAT 2018 (Romania) Aug 2018
2. Chair session Mixture and Latent Class Models for Clustering. CLADAG 2017 (Milan) Sep 2017

IT Skills
Microsoft Office, LaTex, R , Stata, SAS, Matlab, Minitab, Bedtools, MEME-chip, Galaxy, FIMO.

CONFERENCES & SEMINARS
- Invited Talks

Invited Talk at ERCIM2018	University of Pisa, Italy	Dec2018
Invited Talk at ASMOD2018	University of Naples, Italy	Oct2018
Invited Talk at SIS	University of Palermo, Italy	Jun2018
Invited Talk at ClaDAG	University of Milano-Bicocca, Italy	Sep2017
Invited Talk at Classification Society Meeting.	University of Missouri, USA	Jun2016
Invited Talk at ERCIM 2014. Session: Model-based	University of Pisa, Italy	Dec2014

clustering for categorical and mixed-type data		
Invited talk at ECDA Conference	Jacobs University (Bremen), Germany	Jul 2014

- Contributed Presentations

Talk at METMA IX, 9th Workshop on Spatio-temporal modeling,	Montpellier, France	Jun2018
Talk at TIES-GRASPA 2017	University of Bergamo, Italy	Jul2017
Talk at Model-Based Clustering and Classification (MBC2)	Catania, Italy	Sept2016
Talk at COMPSTAT 2016	Oviedo, Spain	Aug2016
Talk at International Federation of Classification Societies (IFCS)	Bologna, Italy	Jul 2015
Talk at Model-Based Clustering and Classification (MBC2)	Catania, Italy	Sept2014
Talk at JSM	Boston, USA	Aug2014
Talk at the 9th Meeting of the Classification and Data Analysis Group of the Italian Statistical Society (ClaDAG),	University of Modena and Reggio Emilia, Italy	Sep 2013

- Seminars & Workshops

Invited seminar at Center for Statistics - Adolphe Quetelet Seminar Series	Ghent University (Belgium)	Sep2017
Invited seminar at Young Researchers Seminars	Memotef, Sapienza University	Jan2017
Talk at Group Meeting (jointly work with Li Q.)	Penn State University (USA)	May2016
Talk at Genomics Seminars, (jointly work with Li Q.)	Penn State University (USA)	Oct2015
Poster presentation at 2015 Bioinformatics and Genomics Retreat	Penn State University (USA)	Aug2015
Poster presentation at 2015 Rao Conference	Department of Statistics, Penn State University (USA)	May2015
Talk at SMAC (Stochastic Modeling and Computing) seminar	Penn State University (USA), Department of Statistics	Apr2014