

Alessio Serafini

Curriculum Vitae

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Current Position

2021 **Data Scientist**, *Data Reply IT srl, Rome, Italy.*

Interests

Data Mining, Machine Learning, Deep Learning, Model-Based clustering; Gaussian Finite Mixture modelling; Computational statistics; Genetic algorithms; Dimension reduction methods; Missing Values; Anomaly detection problem; Fuzzy clustering; R programming, Python programming

Publications

- 2020 **Serafini A., Murphy T. B., Scrucca L.**, *Handling missing data in model-based clustering*, Pre-print available at <https://arxiv.org/abs/2006.02954>.
- 2020 **Serafini A., Scrucca L., Alfò M., Giordani P., Ferraro M. B.**, *Fuzzy and model based clustering methods: can we fruitfully compare them?*, Submitted.
- 2020 **Bove, G. and Serafini, A.**, *Descriptive Analyses of Interrater Agreement for Ordinal Rating Scales*, *Advanced Studies in Behaviormetrics and Data Science*, (https://doi.org/10.1007/978-981-15-2700-5_22).
- 2018 **Scrucca L., Serafini A.**, *Projection Pursuit Based on Gaussian Mixtures and Evolutionary Algorithms*, *Journal of Computational and Graphical Statistics*, (<https://doi.org/10.1080/10618600.2019.1598871>).
- 2018 **Ferraro M.B., Giordani P., Serafini A.**, *fclust: An R Package for Fuzzy Clustering*, *The R Journal*, (<https://doi.org/10.32614/RJ-2019-017>).
- 2018 **Bove G., Nuzzo., Serafini A.**, *Measurement of interrateragreement for the assessment of language proficiency*, *ASMOD 2018: Proceedings of the International Conference on Advances in Statistical Modelling of Ordinal Data ISBN-978-88-6887-042-3.*

Software

Serafini A., *dformula: Data Manipulation using Formula* (<https://cran.r-project.org/web/packages/dformula/index.html>).

Serafini A., Scrucca L., *ppgmmga: Projection Pursuit Based on Gaussian Mixtures and Evolutionary Algorithms* (<https://cran.r-project.org/web/packages/ppgmmga/index.html>).

Ferraro M.B., Giordani P., Serafini A., *fclust: Fuzzy Clustering* (<https://cran.r-project.org/web/packages/fclust/index.html>).

Bartolucci F., Pandolfi S., Pennoni F., Farcomeni A., Serafini A,
LMest: Generalized Latent Markov Models (<https://cran.r-project.org/web/packages/LMest/index.html>).

Past Position

- 2020 **Research Fellow**, *SOSE - Soluzioni per il Sistema Economico S.p.A., Rome, Italy.*
- 2019 **Research Fellow**, *Department of Statistics - Università degli Studi di Perugia, Perugia, Italy.*
Research Project: *Latent variable models with application to health conditions*
Coordinator: Prof. Francesco Bartolucci
- 2018 **Research Fellow**, *Department of statistics - Università degli Studi di Roma "La Sapienza", Rome, Italy.*
Research Project: *Latent Variable Models for Complex Data Structures*
Coordinator: Prof. Paolo Giordani

Education

- 2014 - 2017 **Ph.D. in Statistics**, *Università degli studi di Perugia, Perugia, Italy.*
Thesis: *Model-based clustering: handling missing data, projection pursuit, and anomaly detection*
Supervisor: Prof. Luca Scrucca
- 2010 - 2013 **Master Degree in Finance, Summa cum laude**, *Università degli Studi di Roma "La Sapienza", Rome, Italy.*
Specialized in Financial Mathematics
- 2007 - 2010 **Bachelor's degree in Economics**, *Università degli Studi di Roma "La Sapienza", Rome, Italy.*

Teaching Experiences

- 2016 - 2017 **Teaching assistance for the course of Statistics**, *Università degli studi di Perugia, Perugia, Italy .*

Visiting Position

- January - July 2016 **Visiting Scholar at Department of Mathematics and Statistics**, *University College of Dublin, Dublin, Ireland.*
Supervisor: Thomas Brendan Murphy

Conferences & Workshops

- 14-17 December 2018 **Invited speaker CFE-CFM Statistics 2018**, *University of Pisa, Pisa, Italy.*
The fclust R package for fuzzy clustering: A new version (Ferraro M.B., Giordani P., Serafini A.)
- 20-22 July 2018 **Working Group on Model-Based Clustering**, *University of Michigan, Ann Arbor, USA.*
A Comparison of Model-Based and Fuzzy Clustering Methods. (Alfo M., Ferraro M.B, Giordani P., Scrucca L., Serafini A.)
Speaker: Scrucca L.

- 20-22 July 2018 **SIS2018, 49th Scientific Meeting of the Italian Statistical Society, Palermo, Italy.**
A Comparison of Model-Based and Fuzzy Clustering Methods. (Alfo M., Ferraro M.B, Giordani P., Scrucca L., Serafini A.)
 Speaker: Giordani P.
- 16-22 July 2017 **Working Group on Model-Based Clustering (WGMBC), Università degli studi di Perugia, Perugia, Italy.**
 Poster Session: *Evolutionary projection pursuit based on Gaussian mixtures.*
- 16-22 July 2017 **Working Group on Model-Based Clustering (WGMBC), Università degli studi di Perugia, Perugia, Italy.**
Handling missing data in model-based clustering (T.B.Murphy, Luca Scrucca, Alessio Serafini),
 Speaker: T.B.Murphy
- 5-7 September 2016 **Workshop on Model-Based Clustering and Classification (MBC2), Università di Catania, Catania, Italy.**
- 14-17 June 2016 **Research Student's Conference in Probability and Statistics, University College of Dublin, Dublin, Ireland.**

Other Activities

- August - December 2012 **Thesis Project in Credit Risk, European Investment Bank, Luxembourg City, Luxembourg.**
- January - June 2010 **Erasmus Program, University of Bern, Bern, Switzerland.**

Languages

- Italian Mother tongue
 English Intermediate

Computer skills

- Programming C, C++, SQL
 Softwares R, PYTHON, SAS
 Libraries TENSORFLOW, SCIKIT-LEARN, KERAS, PYTORCH, CHAINER, PANDAS, NUMPY, CARET, GLMNET, RANDOMFOREST, GBM
 Development RSTUDIO, JUPYTER, PYCHARM, GITHUB
 BI platforms TABLEAU, POWER BI, GOOGLE DATA STUDIO
 OS LINUX, MACOS, MICROSOFT WINDOWS
 Others L^AT_EX, MARKDOWN, RMARKDOWN, Microsoft Office suite, OpenOffice, G Suite

Links

- Website <https://www.serafinialessio.it>

GitHub <https://github.com/serafinialessio>

GitHub <https://github.com/dataallaround>

Docker <https://hub.docker.com/u/dataallaround>