

# LIVIO FENGA'S CV

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## Summary

I work as a Senior Lecturer at the University of Exeter (Exeter, UK) where I am the module convenor for the undergraduate course “ Business Statistics in Practice” and the module leader for the course “Introduction to Business Analysis”. I am also the module leader for the postgraduate course in “Marketing Analytics”. I publish on regular basis in reputable international Journals. My research interests are: Analytics (Machine Learning, Statistics) and Data Science.

## Research activity

Analysis and prediction of complex, possibly non-linear, time series using statistical models and Artificial Intelligence algorithms.

## Education

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|-----------------------------------------------------------------------------------------|-----------------------------------|
| University of Rome, Rome, Italy and                                                     | 2016                              |
| University of California San Diego, San Diego, CA, USA                                  |                                   |
| • <b>PhD</b> in Economic Statistics                                                     |                                   |
| University of Berkeley, Berkeley, CA, USA                                               | 2013                              |
| • <b>Post Doctoral Fellow</b> (Lawrence Berkeley National Laboratories)                 |                                   |
| University of California San Diego, San Diego, CA, USA and                              | 2011                              |
| Veteran Administration Hospital (V.A.) San Diego, San Diego, CA, USA                    |                                   |
| • <b>Post Doctoral Scholar</b>                                                          |                                   |
| University of Rome "Tor Vergata", Rome, Italy and                                       | 2010                              |
| University of California San Diego, San Diego, CA, USA                                  |                                   |
| • <b>PhD</b> in Econometric and Empirical Economics                                     |                                   |
| University of Rome <i>La Sapienza</i> , Rome, Italy                                     | 1984–1995                         |
| • <b>M.S.</b> Optimization and System Theory                                            | ( <i>Faculty of Engineering</i> ) |
| • <b>M.S.</b> Operations Research and Decision Making Strategies                        | ( <i>Faculty of Statistics</i> )  |
| • <b>M.S.</b> Mass Communications Sociology                                             | ( <i>Faculty of Sociology</i> )   |
| • <b>B.S.</b> Economics                                                                 | ( <i>Faculty of Economic</i> )    |
| • <b>Professional qualification</b> as Certified Public Accountant and<br>Legal Auditor | ( <i>Faculty of Economic</i> )    |

## Ongoing Education

- **PgCert in Academic Practice (PCAP Apprenticeship)** University of Exeter - The College of Social Sciences and International Studies

## Professional Experience

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| <b>University of Exeter, Exeter (UK)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                      | <b>2021–Present</b> |
| Senior lecturer                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                     |
| Module convenor for the undergraduate course in <i>Business Analytics in Practice</i> and module leader for the postgraduate course in <i>Marketing Analytics</i> . I am also module leader for the undergraduate course “Introduction of Business Analytics”. I also teach Operation Management. I am also associated with the Center for Simulation Analysis and Modelling of the University of Exeter, where I do most of my research e deliver my talks on regular basis. |                     |
| <b>Italian National Institute of Statistics, Rome, Italy</b>                                                                                                                                                                                                                                                                                                                                                                                                                  | <b>1996–2021</b>    |
| Researcher                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                     |
| During this period, I had the opportunity to study at the <b>University of California San Diego, San Diego, CA</b> (Applied Physics and Mathematics Dept.) and at the <b>University of California Berkeley (CA)</b> .                                                                                                                                                                                                                                                         |                     |

**Previous Employment** Between 1991 and 1996, I worked as a Statistician for three big Italian enterprises: SEAT, AVIS and De Agostini. Between 1989 and 1990, I served in the military (Italian Air Force: armed surveillance for highly sensitive target).

**International Cooperation Projects** In the year 2019 I was involved in two statistics-related projects at:

- The Central Administration of Statistics (Lebanon)
- The General Statistics Office (Vietnam).

### **Teaching (University)**

1. Academic year 2002–2003 Lectureship in Sampling Theory as a contract professor at the **University of Sassari, Sassari, Italy**
2. Academic year 2003–2004 Lectureship in Sampling Theory as a contract professor at the **University of Sassari, Sassari, Italy**
3. 2012–2013 Lectureship in Statistics (**University of California San Diego, San Diego, California**)

### **Teaching (ISTAT)**

1. Lecturer for the course on “Using the software R to build Artificial Neural Networks”
2. Lecturer for the course in “Multivariate Statistics with the software R”
3. Lecturer for the course in “Bootstrap and Sampling Theory with the software R”

### **Editorial collaboration**

Contributor for the book ”Quantitative Analysis for Management” (Pearson’s Global Editions, 2023)

### **Grants and Visiting**

Successful funding applications:

1. 2023
  - (a) EU Horizon 2020 (250,000 USD)
  - (b) Internal grant (Research Seed Funding)
  - (c) Internal grant (Research Seed Funding)
2. 2022
  - (a) Internal grant (SEED CORN grant)
  - (b) Internal grant (SEED CORN grant), achieved with Prof. Nav Mustafee and Dr. Alison Harper

*Visiting Professor* at the University of Rome “Tor Vergata” (Rome, Italy) in Machine Learning (Business Analytics) for the Academic Year 2022-2023

### **RELEVANT PUBLICATIONS**

1. L. Fenga, Forecasting combination of hierarchical time series: a novel method with an application to CoVid-19. **Accepted for publication (May 2022)** In *Studies in Theoretical and Applied Statistics*. Springer 2022
2. L. Fenga, M. Galli, Impact estimation on COVID-19 infections following school reopening in September 2020 in Italy. **Accepted for publication (May 2022)** *JSCS-Journal of Statistics and Computer Science*
3. L. Fenga, S. Son–Turan, Forecasting youth unemployment in the aftermath of the COVID-19 pandemic: the Italian case. *International Journal of Scientific and Management Research* Vol. 5 Issue 1 (2022). DOI: 10.37502/IJSMR.2022.5105)
4. L. Fenga, M. Gaspari, Predictive Capacity of COVID-19 Test Positivity Rate. *Sensors* 21.7 (2021): pp. 2435–2460. DOI 10.3390/s21072435
5. L. Fenga, Forecasting the CoViD19 Diffusion in Italy and the Related Occupancy of Intensive Care Units – *Journal of Probability and Statistics*, 2021, pp.1-9

6. L. Fenga, CoViD–19: An Automatic, Semiparametric Estimation Method for the Population Infected in Italy – *PeerJ*. 2021 Mar 4;9:e10819
7. L. Fenga, C. Del Castello, CoViD19 Meta heuristic optimization based forecast method on time dependent bootstrapped data. *Journal of Probability and Statistics*, 2021. DOI 10.1155/2021/1235973
8. L. Quattrociochi, M. Tibaldi, M. Marsili, L. Fenga, and M. Caputi, Active Ageing and Living Condition of Older Persons Across Italian Regions – *Journal of Population Ageing* (2020): pp 1-46
9. L. Fenga and M. Caputi, contributors of the eBook ISTAT *Active Ageing and Living Condition of Older Persons Across Italian Regions* (2020) pp 47–58 ISBN Number 978-88-458-2028-1
10. L. Fenga, Multiscale Decomposition of Big Data Time Series for Analysis and Prediction of Macroeconomic Data. *Book chapter in Theory and Applications of Mathematical Science Vol.3 (2020)* ISBN Number: 978-93-89816-60-0
11. L. Fenga, Filtering and prediction of noisy and unstable signals: The case of Google Trends data *Journal of Forecasting J.* 2019. DOI <https://doi.org/10.1002/for.2626>
12. L. Fenga, Smoothing Parameter Estimation for First Order Discrete Time Infinite Impulse Response Filters *Biom Biostat Int J.* 2018;7(5):483–489. DOI: 10.15406/bbij.2018.07.00250
13. R. Cerqueti, L. Fenga, M. Ventura, Does the U.S. exercise contagion on Italy? A theoretical model and empirical evidence – *Physica A: Statistical Mechanics and its Applications* DOI 10.1016/j.physa.2018.02.073
14. L. Fenga, A Denoising Procedure for ARIMA Models Based on Butterworth Digital Filter. In *Advances in Time Series Analysis and Forecasting (book series “Contribution to Statistics”)*, Springer (2017). Pages 173–196. DOI 10.1007/978-3-319-55789-2
15. L. Fenga and D. N. Politis: LASSO Order Selection for Sparse Autoregression: a Bootstrap Approach *Journal of Statistical Computation and Simulations*. Taylor & Francis Online (2017). DOI 10.1080/00949655.2017.1341885
16. L. Fenga, A Wavelet Threshold Denoising Procedure for Multimodel Predictions: an Application to Economic Time Series – *Statistical Analysis and Data Mining*, DOI 10.1002/sam.11351
17. L. Fenga, Bootstrap Order Determination for ARMA models: a Comparison Between Different Models Selection Criteria. *Journal of Probability and Statistics (2017)*. DOI 10.1155/2017/1235979
18. L. Fenga, Loss of Fitting and Distance Prediction in Fixed vs Updated ARIMA models *Global Journal of Science Frontier Research, Series F, Mathematics and Decision Science* . DOI 10.34257/GJSFR-FVOL17IS1PG19
19. L. Fenga, Time Series Chaos Detection and Assessment via Scale Dependent Lyapunov Exponent *International Journal of Statistics and Probability* (2016). DOI 10.5539/ijsp.v5n6p1
20. L. Fenga, A Compounded Multiresolution Artificial Neural Network Method for the Prediction of Time Series with Complex Dynamics. In *Time Series Analysis and Forecasting (book series “Contribution to Statistics”)*, Springer (2016). Pages 367–384 ISSN: 1431-1968; Print ISBN 978-3-319-28723-2; Online ISBN 978-3-319-28725-6; DOI 10.1007/978-3-319-28725-6
21. L. Fenga, D. N. Politis, Bootstrap Order Selection for SETAR models. *Journal of Statistical Computation and Simulation* Taylor & Francis Online (2013). DOI 10.1080/00949655.2013.811507
22. L. Fenga, D. N. Politis, Bootstrap-based ARMA order selection. *Journal of Statistical Computation and Simulation*. Taylor & Francis Online (2011)
23. F. Battaglia–L. Fenga, Forecasting composite indicators with anticipated information: an application to the industrial production index. *Applied Statistics*, 2003, vol. 52, 3, pp. 279–290
24. P. Missori, L. Fenga, C. Maraglino et al., Spontaneous acute subdural hematomas. A clinical comparison with traumatic acute subdural hematomas. *Acta Neurochirurgica*, Springer-Verlag 2000
25. L. Fenga, Contributions to the *Official Annual Report on the Italian Situation* (years 1996, 1997, 1998)

## ***Proceedings and Poster Sessions***

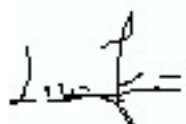
1. F. Solari and L. Fenga, Using the entropic distance for large area definition in small area estimation methods. *Proceedings of the 6<sup>th</sup> Italian Conference on Survey Methodology – ITACOSM 2019, Florence (Italy) “Survey and Data Science”*, June 5–7, 2019  
[https://meetings3.sis-statistica.org/public/conferences/12/schedConfs/10/program-en\\_US.pdf](https://meetings3.sis-statistica.org/public/conferences/12/schedConfs/10/program-en_US.pdf)
2. L. Fenga, Prediction of noisy ARIMA time series via Butterworth digital filter.  
*Proceedings of the ITISE 2016 Work Conference*, Granada (Spain), June 27–29, 2016  
ISBN: 978-84-16478-93-4
3. L. Fenga, Policy Assessment via Wavelet Theory: the Case of Car Accidents in Italy  
Poster Session of the *Italian National Statistical Institute Conference*. Rome (Italy), June 22–24, 2016
4. L. Fenga, Time Series Chaos Assessment via Scale Dependent Lyapunov Exponent  
*Proceedings of the CHAOS 2016 Meeting*. London (UK), May 23–26 2016 in D. Yannis and C. Skiadas, CHAOS 2016 Book of Abstracts: Chaotic Modelling and Simulation International Conference London, UK, May 23–26, 2016. ISAST, 2016.
5. L. Fenga, Artificial Intelligence and Multiscale approximation-based Forecast of Time Series with complex dynamics (2015). *Proceedings of the ITISE 2015 Work Conference*, Granada (Spain), 1–3 July 2015. ISBN: 978-84-16292-20-2.
6. L. Fenga, Bootstrap Model Selection for ARMA model  
Poster Session of the *Conference on Bootstrap and Time Series* - Technischen Universität Kaiserslautern, Kaiserslautern, June 5 – 6, 2008.
7. L. Fenga, Neural Network for the prediction of seasonal time series. A comparative analysis with ARMA models. *Proceedings of the Meeting on Mathematical and Statistical Models for the Analysis of Financial and Insurance data*, Salerno (Italy), April 2004 ISBN 88-901355-0-6. (pages 139–144)
8. L. Fenga and E. Toti, Structural change in time series variance: detection and adjustment. An application to the Italian automotive market. *Proceedings of the Meeting of the Italian Statistical Society (SIS) on multivariate Statistical Analysis for the economic, social, natural sciences and technology*. Naples (Italy), Jun 2003
9. L. Fenga, G. Perani, F. Riccardini, G. Trovato, ICT supply side, an analysis of some statistical sources for Italy: Services Statistics. *Proceedings of the 13<sup>th</sup> Voorburg Group Meeting*. Rome (Italy), September 1998
10. L. Fenga and G. Trovato, Technology (automatic coding) and how classification data are stored. *Proceedings of the Seminar on statistical nomenclature – Working Group IV*. Geneva (CH), April 1997

### ***Ad hoc Reviewer of Manuscripts:***

Computational Statistics; Econometric and Statistics; IEEE Trans. Acoustics Speech Signal Process; Journal of Time Series Analysis; Journal of Statistical Computation and Simulation; Mathematical Methods In the Applied Science; Operations Research.

### ***Musical Studies***

1. Diploma in Musical Theory and Solfege – Conservatory of Music “Bruno Maderna” (Cesena, Italy), 2000
2. Certificate of completion of “Compimento Inferiore” 5<sup>th</sup> in Guitar – Conservatory of Music “Alfredo Casella” (L’Aquila, Italy), 2001
3. Diploma in Harmony – Conservatory of Music “Licinio Refice” (Frosinone, Italy), 2003



**3-20-2023**