

## PERSONAL INFORMATION

**Nicola Pronello**

Date of birth 7 September 1995 | Nationality Italian

## CURRENT POSITION

January 2024 – Present

**Research fellow (Assegnista di ricerca)**

Department of Economics and Statistics “Cognetti de Martiis”, University of Turin, Italy.

## WORK EXPERIENCE

December 2019 - May 2020

**Research fellow (Borsa di studio e di ricerca)**

Department of Economics and Statistics “Cognetti de Martiis”, University of Turin, Italy.

December 2017 - 2018

**Survey interviewer**

Ufficio Pio Onlus Compagnia San Paolo, Turin, Italy.

AY 2017 - 2018

**Project "200 ore", support of the technical and administrative staff**

Department of Economics and Statistics “Cognetti de Martiis”, University of Turin, Italy.

AY 2016 - 2018

**Project "200 ore", support of the technical and administrative staff**

Infopoint Unito, University of Turin, Italy.

## TEACHING EXPERIENCE

AY 2023-2024

**Adjunct professor “Data Mining e Analisi Multivariata” (Bachelor’s level)**

Department of Economics and Statistics “Cognetti de Martiis”, University of Turin, Italy.

AY 2023-2024

**Tutor for the course of “Probabilità e inferenza statistica” (Master’s degree)**

Department of Economics and Statistics “Cognetti de Martiis”, University of Turin, Italy.

AY 2018-2019

**Tutor for the course of “Statistica per l’azienda” (Bachelor’s degree)**

Department of Management, University of Turin, Italy.

## EDUCATION AND TRAINING

December 2020 - Present

**PhD in "Business and Behavioural Sciences" (curriculum in Statistics)****Thesis defense in Summer 2024**

Department of Neuroscience, Imaging and Clinical Sciences, G. d’Annunzio University, Chieti-Pescara, Italy.

Thesis title: “Analysis of complex object data via functional data analysis and graphical models”.

November 2021 - April 2022

**Visiting PhD student**

National Heart and Lung Institute, Imperial College London, UK.

October 2017 - March 2020 **Master's degree in "Metodi Statistici ed Economici per le Decisioni" (Statistical sciences)**

Department of Economics and Statistics "Cognetti de Martiis", University of Turin, Italy.

Thesis title: "Model based clustering for functional data: a dimensional reduction approach via shrinkage method".

September 2014 - November 2017 **Bachelor's degree in "Economia e Statistica per le Organizzazioni" (Economical sciences)**

Department of Economics and Statistics "Cognetti de Martiis", University of Turin, Italy.

Thesis title: "Efficacia predittiva dei modelli logistici e della "Fisher linear discriminant analysis": uno studio di simulazione e un caso studio su dati elettorali".

**PERSONAL SKILLS**

Mother tongue Italian

Other languages	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	C1	C1	C1	C1	C1

Programming skills – competent with most Microsoft Office programs.

R (excellent) Python (good)  
 SAS (elementary) SQL (elementary)  
 STATA (good) LaTeX (excellent)  
 MATLAB (good)

**NATIONAL AND INTERNATIONAL GRANTS**

2023 - 2025 **Complex Environmental Data and Modeling (CoEnv) – PRIN 2022**

Member of the Research Unit of University of Turin, Italy.

Principal investigator: Luigi Ippoliti.

Co-Pi: Rosaria Ignaccolo

2021 - 2023 **Clustering of functional areal data for assessing biodiversity profile**

Member of the Research Unit of University of Turin, Italy.

Principal investigator: Natalia Golini.

2022 - 2023 **Long memory processes for spatial lattice data**

Member of the Research Unit of G. d'Annunzio University, Chieti-Pescara, Italy.

Principal investigator: Luigi Ippoliti.

2020 - 2022 **Network Analysis for Functional Data and Complex Data**

Member of the Research Unit of G. d'Annunzio University, Chieti-Pescara, Italy.

Principal investigator: Lara Fontanella.

2021 - 2022 **Methodological developments for the analysis of long memory spatial processes**

Member of the Research Unit of G. d'Annunzio University, Chieti-Pescara, Italy.

Principal investigator: Luigi Ippoliti.

## SPEAKER IN INVITED TALK

- 2024 **SIS 2024: The 52nd Scientific Meeting of the Italian Statistical Society: Bari, 17-20 June 2024**  
Title: "Functional Graphical models for corpus linguistics in social media".
- 2023 **EUSN2023 - 7th European Conference on Social Networks: September 4-8 , Ljubljana.**  
Title: "Spatio-temporal changes in the Twitter Brexit debate: a functional graphical model approach".
- 2023 **IES2023 - Statistical Methods for Evaluation and Quality: Techniques, Technologies, and Trends: August 30 – September 1, Pescara.**  
Title: "Estimating spatially varying Gaussian Graphical Models to unveil relationships among pollutants in the Red River Delta in Vietnam".
- 2023 **GRASPA 2023 - biennial conference of the Italian research group for Environmental Statistics GRASPA-SIS : July 10-11, Palermo.**  
Title: "Statistical analysis of complex network".
- 2023 **YES Workshop 2023 - Young Enviromental Statisticians International meeting: 3 February, Bologna.**  
Title: "Smoothing spatially dependent functional graphs".
- 2022 **CMStatistics 2022 - 15th International Conference of the ERCIM WG on Computational and Methodological Statistics: 17 – 19 December, London.**  
Title: "Mapping Brexit debate on twitter via functional graphical models".
- 2022 **IFCS 2022 - 17th conference of the International Federation of Classification Societies: 19 - 23 July, Porto.**  
Title: "Penalized model-based functional clustering: a regularization approach via shrinkage methods".

## SPEAKER IN CONTRIBUTED TALK

- 2023 **SIS 2023: Statistical Learning, Sustainability and Impact Evaluation: Ancona, 21-23 June 2023.**  
Title: "Functional Graphical Models to map Brexit debate on Twitter".
- 2023 **ARS 2023: 9th International Workshop on Social Network Analysis: Ischia, 2-3 May 2023.**  
Title: "Functional graphical model in corpus linguistic: an analysis of the spatio/temporal changes in Brexit debate on Twitter".
- 2021 **GRASPA 2021 - biennial conference of the Italian research group for Environmental Statistics GRASPA-SIS : 07 - 09 September 2021, Rome.**  
**Poster presentation** - Title: "Penalized functional clustering with environmental applications".

## CONFERENCE ORGANIZATION

2024 **Session organizer: Complex Environmental Data and Modeling (Co-Env)**

18th International Joint Conference on Computational and Financial Econometrics (CFE) and Computational and Methodological Statistics (CMStatistics) - London, 14-16 December 2024.

## PUBLICATIONS

## Papers in scientific journals

**Penalized model-based clustering of complex functional data**

Nicola Pronello, Rosaria Ignaccolo, Luigi Ippoliti, Sara Fontanella. *Statistics and Computing*, 33, 122 - <https://doi.org/10.1007/s11222-023-10288-2> (2023).

**Functional zoning of biodiversity profiles**

Natalia Golini, Luigi Ippoliti, Rosaria Ignaccolo, Nicola Pronello. *Environmetrics*, e2865. <https://doi.org/10.1002/env.2865> (2024)

## Book chapters

**Penalized model-based functional clustering: a regularization approach via shrinkage methods**

Nicola Pronello, Rosaria Ignaccolo, Luigi Ippoliti, Sara Fontanella. *Classification and Data Science in the Digital Age*. p. 269-276, Switzerland:Springer Cham, ISBN: 978-3-031-09033-2 (2023).

## Conference proceedings

**Functional Graphical models for corpus linguistics in social media**

Nicola Pronello, Emiliano del Gobbo, Lara Fontanella, Rosaria Ignaccolo, Luigi Ippoliti, Sara Fontanella. *Methodological and Applied Statistics and Demography II: SIS 2024, Short Papers, Solicited Sessions, Italian Statistical Society Series on Advances in Statistics*, Springer Cham, 2024. ISBN: 978-3-031-64350-7 (eBook). *to appear*.

**Spatial varying graphical models for water pollutants**

Rosalba Ignaccolo, Nicola Pronello, Alex Cucco, Luigi Ippoliti, Vito Frontuto, Natalia Golini. *Methodological and Applied Statistics and Demography I: SIS 2024, Short Papers, Plenary and Specialized Sessions, Italian Statistical Society Series on Advances in Statistics*, Springer Cham, 2024. ISBN: 978-3-031-64346-0 (eBook). *to appear*

**Spatio-temporal changes in the Twitter Brexit debate: a functional graphical model approach**

Nicola Pronello, Emiliano del Gobbo, Lara Fontanella, Rosaria Ignaccolo, Luigi Ippoliti, Sara Fontanella. *EUSN 2023 Book of Abstracts* p.61, Ljubljana, ISBN: 978-961-295-059-0.

**Estimating spatially varying Gaussian Graphical Models to unveil relationships among pollutants in the Red River Delta in Vietnam**

Nicola Pronello, Alex Cucco, Rosaria Ignaccolo, Luigi Ippoliti. *Proceedings of the IES 2023 Conference* p. 16-21, IIViandante, Chieti, ISBN: 979-12-803-3369-8.

**Gaussian Processes and Deep Neural Networks for Spatial Prediction**

Alex Cucco, Luigi Ippoliti, Nicola Pronello, Pasquale Valentini, Carlo Zaccardi. *SIS 2023, Book of Short Papers* p. 38-41, Pearson, Ancona, ISBN: 978-88-919-3561-8.

### Functional Graphical Models to map Brexit debate on Twitter

Nicola Pronello, Emiliano del Gobbo, Lara Fontanella, Rosaria Ignaccolo, Luigi Ippoliti, Sara Fontanella. SIS 2023, Book of Short Papers p. 1160-1165, Pearson, Ancona, ISBN: 978-88-919-3561-8.

### Statistical analysis of complex networks

Nicola Pronello, Alex Cucco, Rosaria Ignaccolo, Luigi Ippoliti. Proceedings of the GRASPA 2023 Conference. p. 22-25, Palermo:University of Palermo, ISBN: 979-12-210-3389-2.

### Mapping Brexit debate on twitter via functional graphical models

Nicola Pronello, Emiliano del Gobbo, Lara Fontanella, Rosaria Ignaccolo, Luigi Ippoliti, Sara Fontanella. CFE-CMStatistics 2022 Book of Abstracts. p. 8, London:ECOSTA Econometrics and Statistics, ISBN: 978-9925-7812-6-3.

### Penalized functional clustering with environmental applications

Nicola Pronello, Sara Fontanella, Rosaria Ignaccolo, Luigi Ippoliti. Proceedings of the GRASPA 2021 conference. p. 85, Rome: La sapienza University, ISBN: 979-12-200-8496-3.

### Exploratory graph analysis for configural invariance assessment of a test

Sara Fontanella, Lara Fontanella, Alex Cucco, Nicola Pronello, Pasquale Valentini. CFE-CMStatistics 2022 Book of Abstracts. p. 91, London:ECOSTA Econometrics and Statistics, ISBN: 978-9925-7812-6-3.

### Functional zoning of biodiversity profiles

Luigi Ippoliti, Natalia Golini, Rosaria Ignaccolo, Nicola Pronello. Second International Workshop on "Statistical inference for assessing and monitoring natural resources and biodiversity", Siena, 8-9 November 2022.

### Exploratory graph analysis for configural invariance assessment of a test

Alex Cucco, Lara Fontanella, Sara Fontanella, Nicola Pronello. Classification and Data Science in the Digital Age - Book of Abstracts IFCS 2022 p. 242, Porto, ISBN: 978-989-98955-9-1.

### Penalized Model-based Functional Clustering: a Regularization Approach via Shrinkage Methods

Nicola Pronello, Rosaria Ignaccolo, Luigi Ippoliti, Sara Fontanella. Classification and Data Science in the Digital Age - Book of Abstracts IFCS 2022 p. 242, Porto, ISBN: 978-989-98955-9-1.

### Exploratory graph analysis for configural invariance assessment

Sara Fontanella, Alex Cucco, Nicola Pronello. SIS 2022, Book of Short Papers p. 373-378, Pearson, Caserta, ISBN: 9788891932310.

SUBMITTED AND WORKS IN  
PROGRESS

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### Analysing the dynamics of online debates: insights from Textual Network Analysis

Nicola Pronello, Alex Cucco, Emiliano del Gobbo, Sara Fontanella, Lara Fontanella- *submitted*.

### Mapping Brexit debate on Twitter via Functional Graphical Models

Nicola Pronello, Lara Fontanella, Rosaria Ignaccolo, Luigi Ippoliti - *manuscript*.

### Estimating spatially varying Gaussian Graphical Models to unveil relationships among pollutants in a fluvial network

Nicola Pronello, Alex Cucco, Rosaria Ignaccolo, Luigi Ippoliti - *manuscript*.