

ANGELA ANDREELLA

Assistant Professor (RTD-A) - [University Ca' Foscari Venezia](#)

I am an Assistant Professor at the [Department of Economics](#) of the [University Ca' Foscari Venezia](#). I am analyzing and using big data to redefine the design of services to citizens and communities to customize and adapt interventions to the characteristics of the territories and communities of reference.

Previously, I did a Post-Doc at the Department of Statistical Sciences of the University of Padova under the supervision of Professor [Bruno Scarpa](#) and [Livio Finos](#). We are studying Procrustes-based methods in the context of high-dimensional data's functional alignment like fMRI, EEG, and genetic data. In particular, we are developing an extension of the famous perturbation model to improve interpretability, inferential proprieties, model flexibility, and optimization of the computational effort. We are also working on modeling big clinical data collaborating with Dr. [Sabrina Brigadoi](#).

I also finished a Post-Doc at the Department of Science and Technology of the University of Insubria with the supervision of Professor [Antonietta Mira](#). The project was focused on modeling the data from emergency call centers across the Lombardy region in Italy.

I finished my Ph.D. in Statistical Sciences under the supervision of Professor [Livio Finos](#) about statistical methods to analyze neuroscience data, e.g., fMRI data.

Mainly, my interest is to connect the clinical and statistical fields improving both areas. For that, I am a member of the [Psicostat](#) group at the University of Padova.

One Ph.D. thesis project was about a spatial regularization of the Procrustes-based method used in the functional alignment of brain data, i.e., the ProMises (Procrustes von Mises-Fisher) model. I am collaborating with Professor [James Haxby](#) from the Department of Psychological and Brain Sciences at Dartmouth College and with the [Haxby Lab](#).

Another project of the Ph.D. thesis was about a permutation-based approach of the [All Resolution Inference](#) method under the supervision of Professor [Jelle Goeman](#) from the Department of Biomedical Data Sciences and Professor [Wouter Weeda](#) from the Department of Psychology at Leiden University. The method fixes the spatial specificity paradox, computing lower bounds for each cluster's number of active voxels. The method can be applied as many times as the user want, still controlling the family-wise error rate.

I am also collaborating with [Paolo Brambilla](#) and [Giuseppe Delvecchio](#) on various psychiatric and psychological projects.

INTERESTS:

- Dimensional reduction techniques in social environments, Neuroscience, and Medicine in general;
- High Dimensional Statistics in social environments, Neuroscience, and Medicine in general;
- Multiple Testing and Selective Inference in Psychology, Psychiatry, Neuroscience, and Medicine in general;
- Permutation Tests in Psychology, Psychiatry, Neuroscience, and Medicine in general;
- Statistical Shape Analysis in Neuroscience;
- Multivariate analysis in social environments, Psychology, Psychiatry, Neuroscience and Medicine in general.



CONTACT INFO

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☎ +393348250566

🌐 github.com/angeella

🐦 [aangeella](#)

🌐 angelaandreella.netlify.com

LANGUAGES

Professional proficiency: Italian (mother tongue), English: reading (C1) - writing (B2) - listening (C1) – speaking (B2), Spanish: reading (C1) - writing (B1) - listening (C1) – speaking (C1)

Elementary proficiency: French, Catalan

COMPUTER SKILLS

Statistical Packages: R Software - SPSS - SAS - STATA

Languages: R - Python - Matlab - C++ - Markdown - SQL

Other software: LaTeX - Gimp - FSL - GIT - Moodle



EDUCATION

10/2017
–
03/2021

University of Padova
PhD in Statistical Sciences

📍 Padova, Italy

Thesis: Challenges in Functional Magnetic Resonance Imaging (fMRI)
Data Analysis: From Functional Alignment to Selective Inference.

10/2013
–
03/2016

University of Padova
M.S. in Statistical Sciences

📍 Padova, Italy

Thesis: The Catalan National Movement analyzed by Twitter data.

10/2010
–
04/2013

University of Padova
B.S. in Statistical Sciences

📍 Padova, Italy

Thesis: Twitter Sentiment Analysis in Monti's 2013 election campaign.



STUDY VISITS

10/2020
|
10/2020

Short Term Scientific Mission
[Data Science Lab, Università della Svizzera Italiana](#), COST ACTION
(1500 euro)

📍 Lugano, Switzerland

04/2019
|
07/2019

Visiting PhD Student
[LUMC, Department of Biomedical Data Sciences](#)

📍 Leiden, Netherlands.

01/2019
|
04/2019

Visiting PhD Student
[Dartmouth College, Department of Psychological and Brain Sciences](#)

📍 Hanover, NH, USA.

09/2013
|
07/2014

Erasmus Program
[Universitat de Barcelona, Department of Mathematics and Statistics](#)

📍 Barcelona, Spain.



TEACHING EXPERIENCE

03/2022
|
05/2022

Professor - Statistics 2 - Bachelor Degree of Business Administration - 30h
[Department of Economic, Ca' Foscari University of Venice](#)

📍 Venice, Italy

01/2022
|
04/2022

Tutor - Psychometrics - Bachelor Degree of Psychological sciences and techniques - 30h
[Department of Developmental Psychology and Socialization, University of Padova](#)

📍 Padova, Italy

- 10/2021
|
12/2021

● **Tutor - Statistical Learning for Data Science - Master Degree of Data Analytics for Business and Society - 10h**
[Department of Economic, Ca' Foscari University of Venice](#)
 📍 Venice, Italy
- 01/2021
|
08/2021

● **Professor - Experimental Design - Bachelor Degree of Statistical Sciences - 20h**
[Department of Statistical Sciences, University of Padova](#)
 📍 Padova, Italy
- 01/2021
|
08/2021

● **Tutor - Psychometrics - Bachelor Degree of Psychological sciences and techniques - 30h**
[Department of Developmental Psychology and Socialization, University of Padova](#)
 📍 Padova, Italy
- 10/2020
|
01/2021

● **Tutor - Psychometrics - Bachelor Degree of Psychological Sciences of Development Personality and Interpersonal relations - 28h**
[Department of Developmental Psychology and Socialization, University of Padova](#)
 📍 Padova, Italy
- 06/2020

● **Master's Lesson about Permutation-based Cluster-Mass in EEG data - 2h**
[Department of Statistical Sciences, University of Padova, Italy.](#)
 📍 Padova, Italy



THESIS SUPERVISION

- 2022

● **M.S. student. Project: Procruste analysis for spatial transcriptomics data. Supervisor: Livio Finos.**
[Department of Statistical Sciences, University of Padova, Italy.](#)
 📍 Padova, Italy
- 2021

● **B.S. student. Project: Prediction of transport and equipment dispatch in Lombardy's emergency departments: GLM and GAM in comparison. Supervisor: Laura Ventura.**
[Department of Statistical Sciences, University of Padova, Italy.](#)
 📍 Padova, Italy









RESEARCH AND INTERNSHIP EXPERIENCE

- 01/2016
|
03/2016








● **Pre-Graduate Internship**
[Stazione Zoologica Anton Dohrn](#)
 📍 Naples, Italy
- 06/2014
|
06/2015

● **Pre-Graduate Internship**
[Universitat Politecnica de Catalunya](#)
 📍 Barcelona, Spain

WORKING EXPERIENCE

- 05/2021
–
12/2021
- **University of Padova**
Postdoctoral Researcher in Statistical Sciences  Padova, Italy
Project: A Bayesian Approach to the Procrustes-based problem. Grant: BIRD2020 (38734 euro)
- 11/2020
–
05/2021
- **University of Insubria**
Postdoctoral Researcher in Statistical Sciences  Varese, Italy
Project: Tsunami Project - Prediction of the Impact of the COVID-19 Wave on the Emergency and Urgency System in Lombardy. Grant: UA.00.07 – DISAT budget 2020 (16000 euro)
- 09/2015
|
now
- **Private Tutor**
Superprof  Italy
- 06/2016
|
07/2017
- **Data analyst**
Optima Italia  Naples, Italy
- 05/2016
|
06/2016
- **IT Consultant**
Atos S.r.l  Rome, Italy
- 06/2013
|
08/2013
- **Interviewer**
VALMON S.r.l spin-off projects with the [University of Florence](#)  Veneto, Italy
 - conducting interviews in the context of the international European Social Survey (ESS) Round 6 Italy, a survey designed to describe and explain the attitudes, opinions, and behaviors of different European populations

EDUCATIONAL EXPERIENCE

- 2017
|
Present
- **Psicostat**
University of Padova  Padova, Italy
- 2020
- **Proposal writing and writing Laboratory**
University of Padova  Padova, Italy
- 2020
- **Image processing and computer vision with R**
eRum 2020 (virtual conference)  Milan, Italy
- 2020
- **Statistical Consulting - COVID-19 analysis**
University of Padova, Department of Statistical Sciences  Padova, Italy
- 2019
- **Interactive visualisation with R Shiny**
Leiden University  Leiden, Netherlands
- 2018
- **Bayesian Data Analysis and Computation**
University of Padova, Department of Statistical Sciences  Padova, Italy
- 2018
- **Variational Approximations in Statistics**
University of Padova, Department of Statistical Sciences  Padova, Italy

- 2018 ● **Sampling Theory**
University of Padova, Department of Statistical Sciences
📍 Padova, Italy
- 2018 ● **Mortality : Empirical Analysis and Forecasting Models**
University of Padova, Department of Statistical Sciences
📍 Padova, Italy
- 2018 ● **Regression Modelling with Large Data Sets**
University of Padova, Department of Statistical Sciences
📍 Padova, Italy
- 2018 ● **Kalman Filter and State Space Models**
University of Padova, Department of Statistical Sciences
📍 Padova, Italy
- 2018 ● **An Introduction to Missing Data Handling**
University of Padova, Department of Statistical Sciences
📍 Padova, Italy
- 2017 ● **Programming with Python**
University of Padova, Department of Statistical Sciences
📍 Padova, Italy
- 2017 ● **Statistical Learning and Data Science**
University of Padova, Department of Statistical Sciences
📍 Padova, Italy
- 2017 ● **Stochastic calculus of variations and normal approximations**
27th Jyväskylä Summer School 📍 Jyväskylä, Finland
- 2017 ● **Value of information analysis in spatial model**
27th Jyväskylä Summer School 📍 Jyväskylä, Finland
- 2017 ● **Online Social Media Analytics**
27th Jyväskylä Summer School 📍 Jyväskylä, Finland



PUBLICATIONS

- 2022 ● **Insula volumes in first-episode and chronic psychosis: A longitudinal MRI study**
Schizophrenia Research doi: [10.1016/j.schres.2021.12.048](https://doi.org/10.1016/j.schres.2021.12.048), 241, 14–23.
Pigoni, A., Delvecchio, G., Dusi, N., Schiena, G., **Andreella, A.**, Finos, L., Cecchetto, F., Perlini, C., Rossetti, M. G., Ferro, A., Bellani, M., Lasalvia, A., Ruggeri, M., and Brambilla, P.

Andreella, A. provided statistical analysis and writing of the statistical part of the paper.
- 2022 ● **A predictive model for planning emergency events rescue during COVID-19 in Lombardy, Italy**
[arXiv:2203.14287v1 \[stat.AP\]](https://arxiv.org/abs/2203.14287v1)
Andreella, A., Mira, A., Balafas, S., Wit, E. C., Ruggeri, F., Nattino, G., Ghilardi, G., Bertolini, G.

- 2022 ● **Permutation-based true discovery proportions for fMRI cluster analysis.**
[arXiv:2012.00368 \[stat.AP\]](https://arxiv.org/abs/2012.00368).
Andreella, A., Goeman, J., Weeda, W., Hemerik, J., Solari, A., and Finos, L.
- 2022 ● **Procrustes Analysis for High-Dimensional Data**
Psychometrika. doi: 10.1007/s11336-022-09859-5
Andreella, A., and Finos, L.
- 2021 ● **Valid Double-Dipping via Permutation-Based Closed Testing.**
[Preface XIX 1 Plenary Sessions](#), 776-781, Proceedings of Italian Statistical Society (SIS) conference 2021.
Vesely, A., Finos, L., Goeman, J. J., & Andreella, A.

Andreella, A. wrote, proposed, and developed the second statistical methodology presented in the paper.
- 2021 ● **Functional alignment by the “light” approach of the von Mises-Fisher-Procrustes model.**
[Preface XIX 1 Plenary Sessions](#), 1444-1449, Proceedings of Italian Statistical Society (SIS) conference 2021.
Andreella, A., Finos, L.
- 2021 ● **Enhance hyperalignment via spatial prior information.**
submitted
Andreella, A., and Finos, L.
- 2021 ● **PRDA: An R package for Prospective and Retrospective Design Analysis.**
[Journal of Open Source Software](#), 6(58), 2810, ISSN: 2475-9066, doi:10.21105/joss.02810.
Zandonella Callegher, C., Bertoldo, G., Toffalini, E., Vesely, A., Andreella, A., Pastore, M., & Alto`e, G.

Andreella, A. participated in the creation of the R package.
- 2020 ● **A Statistical Approach to the Alignment of fMRI Data.**
[Book of short papers - SIS 2020](#), 733-738, Proceedings of Italian Statistical Society (SIS) conference 2020.
Andreella, A., Feilong, M., Halchenko, Y., Haxby, J. V. L., and Finos, L.
- 2020 ● **The Effect of DHA Supplementation on Cognition in Patients with Bipolar Disorder: An Exploratory Randomized Control Trial.**
[Nutrients](#) doi: 10.3390/nu12030708, 12(3), 708, ISSN: 2072-6643.
Ciappolino, V. and DeIVecchio, G. and Prunas, C. and Andreella, A. and Finos, L. and Caletti, E. and Siri, F. and Mazzocchi, A. and Botturi, A. and Turolo, S. and Agostoni, C. and Brambilla, P.








Andreella, A. provided statistical analysis and writing of the statistical part of the paper.

- 2019 ● **Altered syntactic abilities in first episode patients: An inner phenomenon characterizing psychosis.**
European Psychiatry doi: [10.1016/j.eurpsy.2019.08.001](https://doi.org/10.1016/j.eurpsy.2019.08.001), 61, 119-126, ISSN: 0924-9338.
Delvecchio, G., Caletti, E., Perlini, C., Siri, F. M., **Andreella, A.**, Finos, F., Bellani, M., Fabbro, F., Lasalvia, A., Bonetto, C., Cristofalo, D., Scocco, P., D'Agostino, A., Torresani, S., Imbesi, M., bellini, F., Veronese, A., Bressi, V., and Brambilla, P.

Andreella, A. provided statistical analysis and writing of the statistical part of the paper.
- 2018 ● **Prosody abilities in a large sample of affective and non-affective first episode psychosis patients.**
Comprehensive Psychiatry doi: [10.1016/j.comppsy.2018.07.004](https://doi.org/10.1016/j.comppsy.2018.07.004), 86, 31-38, ISSN: 0010-440X.
Caletti, E., Delvecchio, G., **Andreella, A.**, Finos, L., Perlini, C., Tavano, A., Lasalvia, A., Bonetto, C., Cristofalo, D., Lamonaca, D., Ceccato, C., Pileggi, F., FaustoMazzi, F., Santonastaso, P., Ruggeri, M., Bellani, M., and Brambilla, P.

Andreella, A. provided statistical analysis and writing of the statistical part of the paper.

TALKS

- 09/2021 ● **Efficient Procrustes-based functional alignment for high-dimensional data**
[IBS](#)  Milano, Italy (Virtual conference)
- 09/2021 ● **Generalized Procrustes problem allows to estimate subject-specific functional connectivity in fMRI data**
[AIP](#)  Lecce, Italy
- 08/2021 ● **Predicting the Impact of COVID-19 on the Emergency Departments in Lombardy, Italy**
[JSM](#)  Seattle, USA (Virtual conference)
- 07/2021 ● **pARI package: valid double-dipping via permutation-based All Resolutions Inference**
[useR 2021](#)  Virtual conference
- 06/2021 ● **Functional alignment by the “light” approach of the von Mises-Fisher-Procrustes model.**
[SiS 2021](#)  Milano, Italy (Virtual conference)
- 12/2020 ● **pARI package: valid double-dipping via permutation-based All Resolutions Inference**
[EuroBioC2020](#)  Padova, Italy (Virtual conference)
- 02/2020 ● **Quot capita, tot sententiae. Don't Forget to Use Anatomical Features into the Alignment of fMRI Data**
[Cognitive Science Arena](#)  Brixen, Italy

- 09/2019 ● **A Statistical approach to the alignment of fMRI data**
6th European Student Conference on Behaviour & Cognition
📍 Padova, Italy
- 12/2019 ● **First steps with Python**
Psicostat 3.1
📍 Padova, Italy
- 07/2019 ● **A Statistical approach to the alignment of fMRI data**
12th IBS - Italian Region conference
📍 Naples, Italy
- 06/2019 ● **How to improve the functional alignment of fMRI data using spatial brain information?**
HighDim reading club
📍 Leiden, Netherlands
- 04/2019 ● **A Statistical approach to the alignment of fMRI data**
Psicostat 3.0
📍 Padova, Italy
- 02/2019 ● **A Statistical approach to the alignment of fMRI data**
Haxby Lab
📍 Hanover, New Hampshire, USA

POSTERS

- 06/2020 ● **Improving the Functional Alignment of fMRI Data Using Spatial Brain Information**
Organization for Human Brain Mapping (OHBM)
📍 Montreal, Canada (Virtual conference)
- 06/2020 ● **PRDA package: Enhancing Statistical Inference via Prospective and Retrospective Design Analysis**
European R users meeting (eRum) 📍 Milano, Italy (Virtual conference)
- 10/2019 ● **A Statistical approach to the alignment of fMRI data**
Zero Tre, Prospettive e Nuove Ricerche in Psicometria 📍 Padova, Italy

MEMBERSHIPS

- Italian Region of the International Biometrical Society,
- Organization for Human Brain Mapping (OHBM),
- Institute of Mathematical Statistics (IMS),
- Italian Association of Psychology (AIP).

AWARDS/GRANT

- 2020 ● **Grant for Short Term Scientific Mission**
COST action (1500 euro)
- 2011 ● **Scholarship for merit**
University of Padova (2010 euro)

CERTIFICATION

- 2016 ● **SQL Fundamental Course**
SoL - Society for Organizational Learning - Italy

2022 ● **Security training course**
[Ca' Foscari University of Venice](#)

2013 ● **Certificate of Interviewer**
[VALMON S.r.l](#)

RESPONSIBILITIES FOR ORGANIZING CONFERENCES/SEMINARS/EXHIBITIONS

- [International Winter School](#) - MRInference: from Memberships data to knowledge, 15 to 19 February 2021, online, University of Padova

REVIEWER

- [Animals](#),
- [Statistical Methods & Applications](#),
- [Journal of Affective Disorders](#),
- [Intensive Care Medicine](#)

AUTHOR/CONTRIBUTOR OF THE FOLLOWING PACKAGES FOR R/PYTHON

- [pARI](#),
- [pecora](#),
- [PRDA](#),
- [ProMisesModel](#),
- [alignProMises](#),
- [ARleeg](#)

DICHIARAZIONE SOSTITUTIVA DI CERTIFICAZIONE (art. 46 e 47 D.P.R. 445/2000)

La sottoscritta Angela Andreella ai sensi e per gli effetti degli articoli 46 e 47 e consapevole delle sanzioni penali previste dall'articolo 76 del D.P.R. 28 dicembre 2000, n. 445 nelle ipotesi di falsità in atti e dichiarazioni mendaci, dichiara che le informazioni riportate nel presente curriculum vitae corrispondono a verità.