

Agnese Maria Di Brisco

Curriculum Vitae et Studiorum

Born in Novara (NO), Italy, on the 23rd of November 1988.

Nationality: Italian.

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CURRENT AND PREVIOUS POSITIONS:

March 2020 – present: assistant professor in statistics (RTD-B), University of Piemonte Orientale.

January 2018 – February 2020: *Postdoctoral researcher*. Project: “Regression for mixture models”, supervisor prof. Sonia Migliorati, University of Milano-Bicocca. (*Assegno di ricerca di 24 mesi di cui all'art. 22 della Legge 240/2010, SSD SECS-S/01 STATISTICA*).

January 2016 – November 2017: *Postdoctoral researcher*. Project: “Methods and applications for mixture models”, supervisor prof. Sonia Migliorati, University of Milano-Bicocca. (*Assegno di ricerca di 23 mesi di cui all'art. 22 della Legge 240/2010, SSD SECS-S/01 STATISTICA*).

EDUCATION:

November 2012 - December 2015: *PhD in Statistics*. University of Milano-Bicocca. Title: “Statistical Network Analysis: a Multiple Testing Approach”, supervisor prof. Piero Quatto.

September 2010 - September 2012: *Master's degree in Statistics*, 110/110 cum laude. University of Milano-Bicocca.

September 2007 - September 2010: *Bachelor's degree in Statistics*, 110/110 cum laude. University of Milano-Bicocca.

SCHOLARSHIPS:

November 2012 – December 2015: Scholarship for the *PhD in Statistics*, University of Milano-Bicocca.

RESEARCH INTERESTS:

Mixture models, compositional data analysis, regression models, Bayesian analysis, functional data analysis

PUBLICATIONS:

INTERNATIONAL JOURNALS

1. Di Brisco, A.M., Migliorati, S. (2020). A spatial mixed-effects regression model for electoral data. *Stat Methods Appl*. <https://doi.org/10.1007/s10260-020-00534-6>
2. Di Brisco, A. M., Migliorati, S. (2020). A new mixed-effect mixture model for longitudinal constrained data. *Statistics in Medicine*. <https://doi.org/10.1002/sim.8406>

3. Di Brisco, A. M., Migliorati, S., & Ongaro, A. (2019). Robustness against outliers: A new variance inflated regression model for proportions. *Statistical Modelling*.
<https://doi.org/10.1177/1471082X18821213>.
4. Migliorati, S., Di Brisco, A. M., Ongaro, A. (2018). A New Regression Model for Bounded Responses. *Bayesian Analysis*. 13 (3): 845-872. <https://doi.org/10.1214/17-BA1079>.
5. Di Brisco, A. M. & Farina, P. (2018). Measuring Gender Gap from a Poset Perspective. *Social Indicators Research*. 163 (3): 1109-1124. <https://doi.org/10.1007/s11205-017-1582-8>.
6. Scarduelli, L., Giacchini, R., Parenti, P., Migliorati, S., Di Brisco, A. M. & Vighi, M. (2017). Natural variability of biochemical biomarkers in the macro-zoobenthos: Dependence on life stage and environmental factors. *Environmental Toxicology and Chemistry*, 36 (11): 3158-3167.
<https://doi.org/10.1002/etc.3893>.

CONTRIBUTION IN BOOKS AND PROCEEDINGS

1. Ascari, R., Di Brisco, A. M., Migliorati, S., Ongaro, A. (2021). Alternative parameterizations for regression models with constrained multivariate responses. In *Book of Short Papers SIS 2021*. pp. 930-935. ISBN: 9788891927361.
2. Di Brisco, A. M., Migliorati, S. (2021). A Flexible Mixture Regression Model for Bounded Multivariate Responses. In *Applied Modeling Techniques and Data Analysis 2*. pp. 169-184.
<http://dx.doi.org/10.1002/9781119821724.ch12>.
3. Nicolussi, F., Di Brisco, A. M., Cazzaro, M. (2021). Classification through graphical models: evidences from the EUSILC data. In *Data Analysis and Rationality in a Complex World*. pp. 197-204. ISBN: 978-3-030-60104-1.
4. Migliorati, S., Di Brisco, A. M., Ongaro, A. (2019). The Flexible Beta Regression Model. In *Data Analysis and Applications 1: Clustering and Regression, Modeling-estimating, Forecasting and Data Mining*. pp. 39-52. Publisher: ISTE Group. ISBN: 978-1-786-30382-0.
5. Di Brisco, A. M., Ascari, R., Migliorati, S., Ongaro, A. (2019). A new regression model for bounded multivariate responses. In *Book of Short Papers SIS2019*, pp. 817-822. Publisher: Pearson. ISBN: 9788891915108.
6. Di Brisco, A. M., Farina, P. (2019). Le differenze di genere. In *Vita e percorsi di integrazione degli stranieri in Italia*. pp. 123-135. Istat. ISBN: 978-88-458-1968-1.
7. Di Brisco, A. M., & Migliorati, S. (2018). Spatial mixed model for areal data on the simplex. In *Book of Abstracts of the 11th International Conference of the ERCIM (European Research Consortium for Informatics and Mathematics) Working Group on Computational and Methodological Statistics (CMStatistics 2018)*. ISBN: 978-9963-2227-5-9.
8. Di Brisco, A. M., & Migliorati, S. (2018). A new augmented mixed regression model for proportions. In *Book of Abstracts of the 23rd International Conference on Computational Statistics (COMPSTAT 2018)*. ISBN: 978-9963-2227-3-5.
9. Di Brisco, A. M., & Migliorati, S. (2017). A Special Dirichlet Mixture Model for Multivariate Bounded Responses. In *Cladag 2017 Book of Short Papers*. Universitas Studiorum srl. ISBN: 9788899459710.
10. Migliorati, S., Di Brisco, A. M., & Ongaro, A. (2017). The Flexible Beta Regression Model. In *Book of Abstracts of the 17th Applied Stochastic Models and Data Analysis International Conference with the 6th Demographics Workshop* (pp. 134-135). ISAST: International Society for the Advancement of Science and Technology. ISBN: 978-618-5180-22-5.

11. Di Brisco A. M. (2015). Statistical Network Analysis: a Multiple Testing Approach. (PhD thesis). University of Milano-Bicocca.

SCIENTIFIC ACTIVITIES

TALKS

- Flexible beta regression with functional covariates: a Bayesian approach. Invited talk at the 14th International Conference of the ERCIM WG on Computational and Methodological Statistics. 18-20 December 2021, King's College, London, UK.
- The state of the art in flexible regression models for univariate bounded responses. Invited talk at the 19th Applied Stochastic Models and Data Analysis International Conference. 1-4 June 2021, turned to only virtual conference.
- Simulation studies for a special mixture regression model with multivariate responses on the simplex. Invited talk at the 6th Stochastic Modeling Techniques and Data Analysis International Conference. 2 - 5 June 2020, turned to only virtual conference.
- Classification through graphical models: evidences from the EUSILC data. Invited talk at the 16th Conference of the International Federation of Classification Societies. 26-29 August 2019, Thessaloniki, Greece.
- A new regression model for bounded multivariate responses. Contributed talk at the SIS2019 Conference - Smart Statistics for Smart Applications. 28-21 June 2019, University of Milan, Italy.
- A Flexible Regression Model for Compositional Data. Contributed talk at the 18th Applied Stochastic Models and Data Analysis International Conference. 11-14 June 2019, University of Florence, Italy.
- Spatial mixed model for areal data on the simplex. Contributed talk at the 11th International Conference of the ERCIM WG on Computational and Methodological Statistics. 14-16 December 2018, University of Pisa, Italy.
- A new augmented mixed regression model for proportions. Contributed talk at the 23rd International Conference on Computational Statistics. 28-31 August 2018, Iasi, Romania.
- A Special Dirichlet Mixture Model for Multivariate Bounded Responses. Contributed talk at the 11th Scientific Meeting of the CLAssification and Data Analysis Group of the Italian Statistical Society. 13-15 September 2017, University of Milano-Bicocca, Italy.
- The Flexible Beta Regression Model. Contributed talk at the 17th Applied Stochastic Models and Data Analysis International Conference. 6-9 June 2017, London Mathematical Society, UK.
- Multiple testing for fMRI data analysis with an application about age-related changes in resting state functional connectivity. Poster at the 2nd NeuroMI International Meeting. 10 July 2015, University of Milano-Bicocca, Italy.

SOFTWARE (R PACKAGES)

- *FlexDir: Tools to Work with the Flexible Dirichlet Distribution*, published on CRAN (2017). Sonia Migliorati (author), Agnese Maria Di Brisco (author, maintainer), Matteo Vestrucci (author).
- *FlexReg: Regression models for compositional data*, forthcoming on CRAN. Agnese Maria Di Brisco (author, maintainer), Roberto Ascari (author), Sonia Migliorati (author), Andrea Ongaro (author).

SUMMER/WINTER SCHOOLS PARTICIPATIONS

- March 2013 – Short course on “Compositional Data Analysis” by J. Egozcue and V. Pawlowsky-Glahn, University of Milano-Bicocca.
- May 2013 – Short course on “Bayesian data analysis” by R. Craiu, University of Milan.
- October 2013 – SIS School on “Teoria e pratica dei modelli ad effetti casuali per dati multilivello e longitudinali” by L. Grilli and C. Rampichini, University of Florence.

OTHER SCIENTIFIC ACTIVITIES

- Reviewer for the following international journals: *Computational Statistics*, *Social Indicators Research*, *Statistical Methods in Medical Research*, *Statistical Papers*.
- Indagine sugli effetti delle attività di orientamento di ateneo X edizione (with Bertarelli, G., Mecatti, F.) Università degli studi Milano-Bicocca.

TEACHING ACTIVITIES:

COURSES

- Statistica (2020-2021; 2021-2022). Bachelor’s degree in “Economia Aziendale” sede di Alessandria, University of Piemonte Orientale.
- Metodi statistici per l’impresa (2019-2020; 2020-2021). Master’s degree in “Amministrazione, controllo e professione”, University of Piemonte Orientale. (co-owner of the course with Prof. Bongiorno).
- Introduction to R (2017-2018; 2018-2019). Master’s degree in “Scienze statistiche ed economiche”, University of Milano-Bicocca (Lecturer).
- “Statistica I” (2016-2017; 2017-2018; 2018-2019). Bachelor’s degree in “Scienze statistiche ed economiche”, University of Milano-Bicocca (Assistant).
- “Statistica” (2015-2016; 2016-2017). Bachelor’s degree in Sociology, University of Milano-Bicocca (Assistant).
- “Statistica I - Complementi” (2015-2016). Bachelor’s degree in “Statistica e gestione delle informazioni”, University of Milano-Bicocca. (Assistant)
- “Calcolo delle probabilità” (2013-2014; 2015-2016). Bachelor’s degree in “Scienze statistiche ed economiche”, University of Milano-Bicocca (Assistant).
- “Demografia” (2013-2014). Bachelor’s degree in Sociology, University of Milano-Bicocca (Assistant).
- Demografia Sociale (2012-2013). Bachelor’s degree in “Statistica e gestione delle informazioni”, University of Milano-Bicocca (Tutor).

SUPERVISED STUDENTS

- Second thesis advisor for Master's degree in "Biostatistica". Students: Bertolazzi, G. (2016), Gallo, F. (2017), De Carolis, L. (2017).
- Second thesis advisor for Master's degree in "Scienze statistiche ed economiche". Student: Gerosa, F. (2018).

ADDITIONAL SKILLS

Languages: Italian (mother tongue), English (good)

Statistical software: R, SAS, winBUGS, STAN

Other software: LaTeX, Microsoft Office

Milano, 23/11/2021

Agnese Maria Di Brisco

I give my permission to use my private data as for the Italian DL 196/03.