

# LAURA D'ANGELO

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## CURRENT POSITION

**Postdoctoral researcher in Statistics** (Dec 2021 – )  
Department of Economics, Management and Statistics (DEMS)  
University of Milano Bicocca  
Supervisor: Prof. Bernardo Nipoti.

## EDUCATION

### **PhD in Statistics**

Oct 2018 – Nov 2021; defense on May 4, 2022  
Department of Statistical Science, University of Padova  
◦ Thesis: “Bayesian modeling of calcium imaging data”  
◦ Supervisor: Prof. Antonio Canale  
◦ Co-supervisor: Prof. Michele Guindani.

### **Master's Degree in Statistics**

Oct 2015 – Nov 2017  
Department of Statistical Science, University of Padova  
◦ Thesis: “Bayesian nonparametric models: applications in insurance”  
◦ Supervisor: Prof. Antonio Canale  
◦ Final mark: 110/110 *cum laude*.

### **Bachelor's Degree in Statistics, Economics and Finance**

Oct 2012 – Sep 2015  
Department of Statistical Science, University of Padova  
◦ Thesis: “Covariate-specific area under the ROC curve”  
◦ Supervisor: Prof. Gianfranco Adimari  
◦ Final mark: 110/110 *cum laude*.

## VISITING PERIODS

Department of Statistics, University of California, Irvine.  
Irvine, CA; USA.  
Jan 2020 – Nov 2020  
Supervisor: Prof. Michele Guindani.

## AWARDS

- ISBA Poster Award, ISBA 2022.
- Junior travel award, ISBA 2022.
- Best Student/Postdoc Contributed Paper Award, ISBA 2021.

## WORK EXPERIENCE

Data analyst at BIP, Milan (Jan 2018 – Sep 2018).

## RESEARCH INTERESTS

- Bayesian modeling
- Model-based clustering
- Computational statistics

## PUBLICATIONS

- D'Angelo, L. (2022) Bayesian nonparametric clustering of spatially-referenced spike train data, in *Book of Short Papers SIS 2022*.
- Denti F., D'Angelo, L. and Guindani, M. (2022) Bayesian approaches for capturing the heterogeneity of neuroimaging experiments, in *Book of Short Papers SIS 2022*.
- D'Angelo L., Canale A., Yu Z. and Guindani M. (2022) Bayesian nonparametric analysis for the detection of spikes in noisy calcium imaging data. *Biometrics*, 1-13, doi.org/10.1111/biom.13626.
- D'Angelo L. and Canale A. (2021) Efficient posterior sampling for Bayesian Poisson regression. *arXiv preprint arXiv:2109.09520*.
- D'Angelo L. and Canale A. (2021) Contributed Discussion on: "Centered Partition Processes: Informative Priors for Clustering", in *Bayesian Analysis*, 16(1).
- D'Angelo L., Canale A., Yu Z. and Guindani M. (2021) Detection of neural activity in calcium imaging data via Bayesian mixture models, in *Book of Short Papers SIS 2021*, ISBN: 9788891927361.
- D'Angelo L. (2019) Model based clustering in group life insurance via Bayesian nonparametric mixtures, in *Book of Short Papers SIS 2019*, ISBN: 9788891915108.

## SOFTWARE

- D'Angelo L. (2021) "bpr: Fitting Bayesian Poisson Regression", *R package*, CRAN.R-project.org/package=bpr

## CONFERENCE PRESENTATIONS

- Invited talk: "Bayesian nonparametric clustering of spatially-referenced spike train data"; *SIS 2022*, Caserta, Italy; June 22 – 24, 2022.
- Discussant at the solicited session "Bayesian inference for complex random structures"; *SIS 2022*, Caserta, Italy; June 22 – 24, 2022.
- Contributed talk: "Bayesian nonparametric analysis for the detection of spikes in noisy calcium imaging data"; *JSM 2021*; August 8 – 12, 2021.
- Contributed talk: "Bayesian nonparametric analysis for the detection of spikes in noisy calcium imaging data"; *ISBA 2021*, June 23 – July 2; 2021. Pre-recorded video available at [youtu.be/SLLSJVuFnMs](https://youtu.be/SLLSJVuFnMs).
- Contributed talk: "Detection of neural activity in calcium imaging data via Bayesian mixture models"; *SIS 2021*, Pisa, Italy; June 21 – 25, 2021.
- Talk: "Efficient posterior sampling for Bayesian Poisson regression"; Junior session at the *Bayesian Nonparametrics for Complex Data, Concluding workshop*, University of Padova; January 24, 2020.
- Contributed talk: "Model based clustering in group life insurance via Bayesian nonparametric mixtures"; *SIS 2019*, Milan, Italy; June 12 – 14, 2019.

## POSTER PRESENTATIONS

- "Clustering activation patterns of spatially-referenced neurons"; *Statistical methods and models for complex data*, Padova, Italy; September 21 – 23, 2022.
- "Clustering activation patterns of spatially-referenced neurons"; *ISBA 2022*, Montreal, Canada; June 27 – July 1, 2022.

SEMINARS	<ul style="list-style-type: none"> <li>• “Clustering activation patterns of spatially-referenced neurons”; virtual seminar at the Department of Statistics, ITAM, Mexico; September 2, 2022.</li> <li>• Presentation of the topic and data description at the Data Research Camp, San Servolo Island, Venice, Italy; July 12, 2022.</li> </ul>
TEACHING EXPERIENCE	<ul style="list-style-type: none"> <li>• Classes on the use of Latex for scientific writing and bibliography management (1 CFU). April 2021, University of Padova.</li> <li>• Tutor: lectures and exercises for the courses of Statistics (Advanced) and Mathematical Analysis 1. October 2016 – June 2017, University of Padova.</li> </ul>
WORKSHOPS	<ul style="list-style-type: none"> <li>• Bayesian Nonparametrics for Complex Data, Concluding workshop. January 24, 2020; Department of Statistical Sciences, University of Padova, Padova, Italy.</li> <li>• Data Research Camp, San Servolo Island, Venice, Italy. July 2 – 5, 2019. 3-day meeting where groups of young scholars, advised by a senior researcher, were asked to develop innovative methods and models to analyze a common dataset.</li> </ul>
SERVICE	<p><b>Memberships</b></p> <ul style="list-style-type: none"> <li>• International Society for Bayesian Analysis</li> <li>• Società Italiana di Statistica</li> </ul> <p><b>Referee for:</b> Computational Statistics and Data Analysis; Statistical Science; Statistics in Medicine.</p>
COMPUTER SKILLS	<ul style="list-style-type: none"> <li>• Languages: R, Rcpp (good); C/C++, Python (basic).</li> <li>• Other: Latex (good); GitHub (basic); HTML, CSS (basic).</li> </ul>
LANGUAGES	Italian (native); English (good).
DATA HACKATHONS	<ul style="list-style-type: none"> <li>• June 27 – 28, 2017: First prize winner at Stats Under the Stars<sup>3</sup>, Florence.</li> </ul>