Federico **Ferrari**

913A Rosehill Avenue, Durham, NC 27705, US

+1 (919)-6676-764 | federico.ferrari@duke.edu

fedfer | federico-ferrari

Research Interests

Bayesian Modeling, Bayesian Nonparametric, Bayesian Factor Regression, Scalable Algorithms for Bayesian Models, Conformal Inference, Brain Connectomics

Education

PhD Candidate in Statistics *Aug. 2017 - present*

Duke University, Durham, NC, US
Advisor: David B. Dunson
Committee: David B. Dunson, Amy Herring, Mike West, Kate Hoffman
First Year Advisor: Mike West

Senior Allievo *Sept. 2015 - July 2017*

Collegio Carlo Alberto, Moncalieri, Italy
Master in Statistics and Applied Mathematics *with distinction*

M.Sc. in Stochastics and Data Science *Sept. 2015 - July 2017*

Department of Mathematics, University of Torino, Italy
Final grade: 110/110 *cum laude*

B.A. in Economics and Finance *Sept. 2012 - July 2015*

Department of Economics, University of Bologna, Italy
Final grade: 110/110 *cum laude*

Work Experience

Data Science Intern *June - August 2019*

Valassis Digital, Morrisville, NC, US

- Develop Bayesian methods for cold starts
- Develop metrics for large ranking lists

Research Experience

Research Assistant *Jan. 2018 - present*

Advisor: Professor David B. Dunson

Master Thesis *Sept. 2016 - July 2017*

Supervisor: Professor Stefano Favaro
Thesis : *Multi-armed bandits for species discovery: An application to Political Polls* .

Teaching Experience

Teaching Assistant *January 2020 - May 2020*
Case Studies STA 723 (PhD level course)

Teaching Assistant *August - December 2019*
Statistical Programming STA 523L (Master level course)

Teaching Assistant *July - August 2019*
Data Analysis and Statistical Inference STA 101

Scholarships and Awards

Data Expeditions Award, *July 2018*
Durham, NC, US
Project *Poverty Indexes from World Bank Data*

ISBA World Meeting, *June 2018*
Edinburgh, UK
Travel Award for Poster presentation

Applied Bayesian Statistics School, *Aug. 2016*
Como, Italy
Scholarship covering registration fee and housing expenses

Allievi Honors Program full Scholarship *Sept. 2015 - July 2017*
Collegio Carlo Alberto, Torino, Italy
Scholarship covering university fees and housing expenses

Erasmus+ Scholarship *Aug. 2014 - Jan. 2015*
University of Lund, Sweden
EU Scholarship partially covering the costs of a semester of study abroad

10th position *June 2011*
National Mathematical Olympiad Team Challenge
National team competition of the Math Olympiad at high school level

Personal skills

Languages **English**: Fluent

Italian: Native speaker

Computer Skills Python
R
Matlab
LaTeX

Pubblications and Preprints

Ferrari, F.*, Dunson, D. B. (2020). Bayesian Factor Analysis for Inference on Interactions. *Journal of the American Statistical Association* just-accepted (2020): 1-29. Link

Camerlenghi, F.*, Dumitrascu, B.*, **Ferrari, F.***, Engelhardt, B. E., Favaro, S. (2020+) Nonparametric Bayesian Multi-Armed Bandits for Single Cell Experiment Design . *submitted*. ArXiv

Ferrari, F.*, Dunson, D. B. (2020+) Identifying main effects and interactions among exposures using Gaussian processes.*submitted*. ArXiv. Supplementary Materials.

Working Papers

Jiang M, **Ferrari, F*** and Dunson D. Structural Equation Models for Environmental Health Outcomes.

Ferrari, F*, Engel S, Dunson D and Herring A. Bayesian Factor Copula for Inference on Dose-Response Curves

Ferrari, F.*, Wong, U. P-nDCG: a new learning-to-rank metric for large lists of imbalanced binary data.

Poworoznek, E.*, **Ferrari, F.**, Dunson, D. B. Bayesian semi-parametric factor modelling with the infinite package for R. CRAN link

Talks and Posters

Bayesian Factor Copula for Inference on Dose-Response Curves (FIN) @ ENAR 2020, Nashville
Bayesian Factor Analysis for Inference on Interactions (FIN) @ CMStatistics 2019, London
Bayesian Factor Analysis for Inference on Interactions (FIN) @ ISEE 2019, Utrecht
Identifying main effects and interactions among exposures using Gaussian processes @ PRIME meeting 2019, NIH RTP, NC
Estimating interactions between exposures using Gaussian processes and strong heredity @ ISBA 2018, Edinburgh