Francesca Panero

Curriculum Vitae

francesca.panero@stats.ox.ac.uk; francescaelena.panero@gmail.com

4rd (last!) year PhD student in Statistics at the University of Oxford, under the supervision of Prof. F. Caron and Prof. J. Rousseau, graduating at the beginning of 2022. I work on three research streams: networks models, privacy assessment and fair machine learning. On the network side, I am working on a spatial model for sparse networks based on Bayesian nonparametric techniques and on modeling multiscale networks for brain connectome data. On the privacy side, I am interested in the estimation of disclosure risk arising in the publication of data under privacy constraints. Finally, I am working on linear and generalised linear regression models to achieve the fairness requirement of statistical parity through ridge regression techniques.

Education

Mar – May 2021   **Visiting researcher at IDSIA**, *Lugano, Switzerland*.
Working with Dr Marco Scutari

Feb – Mar 2020   **Visiting student at Duke University**, *Durham, North Carolina (USA)*.
Working with David Dunson's group

Oct 2017 – Present   **DPhil student in Statistical Science (OxWaSP: Oxford - Warwick Statistical Programme)**, *University of Oxford*.
Expected graduation date: January 2022

Oct 2015 – Jul 2017   **Senior Allievo, Allievi Honors Program**, *Collegio Carlo Alberto*, Moncalieri, Italy.
Master in Statistics and Applied Mathematics *with distinction*

Sep 2015 – Jul 2017   **M.Sc. in Stochastics and Data Science**, *Università di Torino, Italy*.
Final grade: 110/110 *cum laude*

Sep 2012 – Jul 2015   **Junior Allievo, Allievi Honors Program**, *Collegio Carlo Alberto*, Moncalieri, Italy.
Diploma Allievi in Economics *with distinction*

Sep 2012 – Oct 2015   **Laurea in Matematica (Bachelor in Mathematics)**, *Università di Torino, Italy*.
Final grade: 110/110 *cum laude*

Publications and Preprints

2021   **Optimal disclosure risk assessment**, *The Annals of Statistics*, 49.2: 723-744..
F. Camerlenghi, S. Favaro, Z. Naulet, F. Panero. arXiv:1902.05354

2019   **On sparsity, power-law and clustering properties of graphex processes**.
F. Caron, F. Panero, J. Rousseau. arXiv:1708.03120

Working papers

2021 **Achieving Fairness with a Simple Ridge Penalty**.
M. Scutari, F. Panero, M. Proissl.

2021 **Sparse spatial random graphs**.
F. Caron, F. Panero, J. Rousseau.

2021 **Bayesian nonparametric disclosure risk assessment**, *submitted*.
F. Panero, T. Rigon, S. Favaro

Talks and posters

Jun 2021 **Department of CS, University of the Italian Speaking Switzerland (USI)**, *seminar*.
Sparse spatial random graphs

Apr 2021 **Young Statisticians Europe (YSE)**, *seminar*.
Sparse spatial random graphs

Mar 2021 **School of Mathematical Sciences, University of Nottingham**, *seminar*.
Sparse spatial random graphs

Dec 2020 **CMStatistics**, *contributed session*.
Sparse spatial random graphs

Aug 2020 **Duke Graduate Summer Talks**.
Sparse spatial random graphs

Dec 2019 **CMStatistics**, *invided session*.
Optimal disclosure risk assessment

Jul 2019 **Bocconi Summer School in Advanced Statistics and Probability**, *poster*.
Sparse spatial random graphs

Jun 2019 **Bayesian Nonparametrics 2019**, *poster*.
Sparse spatial random graphs

Jun 2019 **Italian Statistical Society 2019**, *invited session*.
Optimal disclosure risk assessment

Mar 2019 **Workshop on Machine Learning, Computational Statistics and Applications, Amazon Development Centre Germany**, *poster*.
Sparse spatial random graphs

Jun 2018 **2018 ISBA World Meeting**, *poster*.
Optimal disclosure risk assessment

Work Experience

Oct 2018 – present **Tutor and TA in Applied Statistics**, *Department of Statistics, University of Oxford*.
Marking and showing solutions to problem sheets for 3rd year students of the BA in Mathematics.

Apr 2019 – Jun 2019 **Tutor in Preliminary of Statistics and Data Science and Applied Statistics**, *University of Oxford*.
Hertford College and Exeter College tutor.

Sept 2012 – Aug 2017 **Private student tutor in Mathematics and Physics**, *Torino*.
Tutoring high school and middle school students.

April 2015 – July 2015 **Collaboration project with *DB&B Consulting***, Torino.
Thesis in collaboration with *DB&B Consulting*, risk management company.

Aug. 2015 – Sept. 2015	**Internship, Accounting office *RSM***, Torino. Working on voluntary disclosures.
Sept. 2014	**Speaker at the conference "Mathematics, Physics and Music"**, Torino. Lecturer for Alfaclass summer school of Mathematics, Fondazione CRT.

Scholarship and Awards

Sept. 2017 – present	**EPSRC full scholarship (4 years)**, *Oxford*. Scholarship covering salary, university fees and college fees.
Sept. 2012 – Jul. 2017	**Allievi Honors Program full scholarship, Collegio Carlo Alberto**, *Moncalieri (TO)*. Scholarship covering university fees.
Aug. 2016	**Scholarship for summer school "Applied Bayesian Statistics"**, *Como*. Summer school "Bayes, Big Data, and the Internet" held by Dr. Steven Scott, Google. Awarded according to merit criteria.

Summer Schools

Jul. 2019	**Bocconi Summer School in Advanced Statistics and Probability**, *Como*. Random Graphs and Complex Networks: Structure and Function. Remco van der Hofstad (Eindhoven University of Technology, NL), Shankar Bhamidi (University of North Carolina, USA)
Aug. 2016	**Summer school "Applied Bayesian Statistics"**, *Como*. Bayes, Big Data, and the Internet. Dr. Steven Scott, Director of Statistics Research at Google
Sept. 2013	**Alfaclass summer school of Mathematics**, *Università degli Studi di Torino*. Fondazione CRT, Diderot Project

Skills

Languages

English	Fluent in speaking and writing **TOEFL exam** (Oct. 2016): 109/120
French	Good speaking and writing skills **DELF B1 exam** (Feb. 2012): 92/100
Italian	Native speaker

Computer Skills

Advanced: R, Python (NumPy, SciPy. PyCharm environment), LaTeX

Intermediate: GitHub, MATLAB, Microsoft Windows and Office (ECDL)

Basic: HTML, SAS, SQL, C++, CUDA

Other Skills

GRE exam (Sept. 2016):

Quantitative 170/170, Verbal 156/170, Analytical Writing 3.5.

Extra-Curricular Activities

Organization Committee member of EquiStats, discussion group on the themes of equality, diverity and inclusion in the Department of Statistics, Oxford. I co-organised the discussions around diverse hiring practices and fairness in machine learning. Co-organizer of the R Users Group in Oxford. Member of the committee at St. Peter's College Boat Club and Middle Common Room. Member of the Green Team in the Statistics Department, Oxford.

Volunteering Tutor for A-levels students in Mathematics from disadvantaged school in Oxford. French and English teacher and children entertainer in Gabon and Congo (08/2011, 08/2013). Experiences with refugees in Southern Italy (summer 2015 and 2016).

Music Playing piano. Conducting and singing in choirs. Co-founder of StatsChoir, Oxford.

Sport Rowing at college level at University of Oxford (2018-2020). Yoga. Sinchronized swimming.