Alessia CAPONERA

PERSONAL DATA

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ACADEMIC POSITIONS

OCTOBER 2020 – PRESENT	Postdoctoral Associate **École Polytechnique Fédérale de Lausanne** In the research team of Prof. Victor Panaretos
DECEMBER 2019 – SEPTEMBER 2020	Research Associate **University of Rome Tor Vergata** In the research team of Prof. Domenico Marinucci

EDUCATION

NOVEMBER 2016 – FEBRUARY 2020	Ph.D. in *Methodological Statistics* **Sapienza University of Rome** Thesis: *Statistical Inference for Spherical Functional Autoregressions* Under the joint supervision of Prof. Pierpaolo Brutti and Prof. Domenico Marinucci
AY 2015 – 2016	Master *Mathématiques, Informatique, Décision et Organisation* **Paris Dauphine University** Thesis: *Evidence Estimation of State Space Models: Sequential Monte Carlo^2 and Chib's Method* Advisor: Prof. Christian P. Robert
OCTOBER 2014 – OCTOBER 2016	Master of Science in *Statistics and Decisions* (double degree) **Sapienza University of Rome** 110 cum laude/110 Thesis: *Adaptive Smoothing Spline with Application to Seismic Data* Advisor: Prof. Pierpaolo Brutti
OCTOBER 2011 – JULY 2014	Bachelor's Degree in *Statistics, Economics and Society* **Sapienza University of Rome** 110 cum laude/110
2006 – 2011	High School Diploma **Liceo Scientifico B. Croce di Roma**

ACADEMIC AWARDS

:: IMS New Researcher Travel Award to attend the 2022 IMS Annual Meeting (800USD)

:: ISBA Travel Award to attend the 2018 ISBA World Meeting (250USD)

Service to Profession

Refereed Journals

Caponera, A., Durastanti, C. (2022) *Parametric estimation for functional autoregressive processes on the sphere.* Theory of Probability and Mathematical Statistics, vol. 106, 63-83.

Caponera, A. (2021) *SPHARMA approximations for stationary time series on the sphere.* Statistical Inference for Stochastic Processes, vol. 24, pp. 609-634.

Caponera, A., Durastanti, C., Vidotto, A. (2021) *LASSO estimation for spherical autoregressive processes.* Stochastic Processes and their Applications, vol. 137, pp. 167-199.

Caponera A., Marinucci D. (2021) *Asymptotics for spherical functional autoregressions.* Annals of Statistics, vol. 49, no. 1, pp. 346-369.

Manuscripts Under Review and In Preparation

Caponera, A., Fageot, J., Simeoni, M., Panaretos, V.M. (2021+) *Nonparametric estimation of covariance and autocovariance operators on the sphere.* Manuscript submitted for publication. arXiv:2112.12694

Caponera, A., Panaretos, V.M. (2021+) *On the rate of convergence for the autocorrelation operator in functional autoregression.* Manuscript submitted for publication. arXiv:2202.09287

Conference Proceedings and Book Chapters

Spoto, F., Caponera, A., Brutti, P. (2022) *Universal change point testing for dependent data.* To appear in: Book of Short Papers SIS 2022.

Spoto, F., Caponera, A., Brutti, P. (2021) *Spherical autoregressive change-point detection with applications.* In: Book of Short Papers SIS 2021. ISBN: 9788891927361

Caponera, A., Denti, F., Rigon, T., Sottosanti, A., Gelfand, A. (2018) *Hierarchical spatio-temporal modeling of resting state fMRI data.* In: Studies in Neural Data Science (Canale, A., Durante, D., Paci, L., Scarpa, B., editors).

Caponera, A., Werner, M. J. (2018) *How robust is the skill score of probabilistic earthquake forecasts?.* In: Book of Short Papers SIS 2018. ISBN: 9788891910233

Teaching Experience

AY 2021 – 2022	<u>TA</u> for the course
Fall	*Linear models* (Prof. Victor Panaretos)
	Bachelor in *Mathematics,* Masters in *Data Science* and *Digital Humanities,* **EPFL**
AY 2020 – 2021	<u>TA</u> for the course
Fall	*Probabilités et statistique* (Prof. Matthieu Wilhelm)
	Bachelors in *Mechanical* and *Electrical Engineering,* **EPFL**
AY 2019 – 2020	<u>Lecturer</u> for the following courses:
Spring	*Probabilità e statistica* (30h/60h) shared with Dr. Francesco Iafrate (30h/60h)
Spring	*Laboratorio di statistica* (30h)
	Bachelor in *Mechanical Engineering,* **Sapienza University of Rome**
Spring	*Hacking day on Statistical Inference for Spherical Functional Autoregressions* (2h, specialist lecture)
	M.Sc. in *Mathematics for Data Science,* **University of Trento**
AY 2018 – 2019	<u>TA</u> for the following courses:
Fall	*Statistica di base* (Prof. Valeria Sambucini)
	Bachelor in *Statistics,* **Sapienza University of Rome**
Fall	*Statistical Methods in Data Science and Laboratory* (Prof. Pierpaolo Brutti)
	M.Sc. in *Data Science,* **Sapienza University of Rome**
AY 2017 – 2018	<u>TA</u> for the following courses:
Fall	*Statistica di base* (Prof. Valeria Sambucini)
	Bachelor in *Statistics,* **Sapienza University of Rome**
Fall	*Laboratory of Statistical Decisions* (Prof. Fulvio De Santis)
	M.Sc. in *Statistics and Decisions,* **Sapienza University of Rome**
Spring	*Inferenza statistica* (Prof. Luca Tardella)
	Bachelor in *Statistics,* **Sapienza University of Rome**
AY 2016 – 2017	<u>TA</u> for the course
Spring	*Inferenza statistica* (Prof. Luca Tardella)
	Bachelor in *Statistics,* **Sapienza University of Rome**
2016 – 2019	Collaboration within the project "Piano Lauree Scientifiche"
	Department of Statistical Sciences, **Sapienza University of Rome**
	<u>Main activities</u>:
	– Tutoring service and remedial courses
	– *Alternanza Scuola Lavoro* for **Liceo scientifico Plinio Seniore di Roma** (2016/17, 2017/18)
	– *Verso l'Esame di Stato: Statistica e Probabilità* (2018/19)
	– *Convegno sui Licei Matematici* (2018/19)

Presentations

Invited Seminars

2022 Department of Mathematics, **University of Rome Tor Vergata**
2021 Department of Mathematics and Statistics, **Maynooth University** (online)
2020 School of Computer Science & Statistics, **Trinity College Dublin**
2019 Department of Mathematics, **University of Rome Tor Vergata**

Invited Talks

2022 International Symposium of Nonparametric Statistics, Paphos, Cyprus
2022 Third Italian Meeting on Probability and Mathematical Statistics, Bologna, Italy
2022 39th Spanish Conference on Statistics and OR (SEIO 2022), Granada, Spain
2021 CFE-CMStatistics, London, UK (online)
2021 One World YoungStatS Webinar on Recent Advances in Functional Data Analysis, with discussant (online)
2019 Second Italian Meeting on Probability and Mathematical Statistics, Vietri sul Mare (SA), Italy
2019 StaTalk@UniBO, Bologna, Italy

Contributed Talks

2022 IMS Annual Meeting, London, UK
2019 CFE-CMStatistics, London, UK
2019 11th International Workshop on Statistical Seismology, Hakone, Japan
2019 European Meeting of Statisticians, Palermo, Italy
2019 3rd Warsaw Summer School in Probability, Warsaw, Poland
2018 49th Scientific Meeting of the Italian Statistical Society (SIS 2018), Palermo, Italy
2017 CFE-CMStatistics, London, UK

Posters

2018 ISBA World Meeting, Edinburgh, Scotland
2017 SISBAYES, Rome, Italy

Scholarships and Funding

Swiss National Science Foundation (SNSF) grant
2021 *Towards Holistic Functional Data Analysis* (PI: Prof. Victor Panaretos)

Sapienza University funding "Progetti di Ricerca (Piccoli, Medi) - Progetti Medi"
2019 *Trattamento dell'incertezza: identificabilità, campi aleatori* (PI: Prof. Barbara Vantaggi)

Sapienza University funding "Progetti per Avvio alla Ricerca"
2018 *Space-Time Spherical Random Fields and their Applications to Astrostatistics*
2017 *Estimating and Forecasting Earthquakes by Adaptive Smoothing Splines*

2017 LML Summer School 2017 scholarship
London Mathematical Laboratory

2015 Erasmus+ scholarship
Paris Dauphine University

Languages

ITALIAN: Mother tongue
ENGLISH: B2
FRENCH: A2

Computer Skills

OPERATING SYSTEMS: macOS, Windows
LANGUAGES AND SOFTWARE: R, Python, Matlab, LaTeX, Microsoft Office