

Oskar Laverny

PhD in Statistics

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"What would be the dependence structure between quality of code and quantity of coffee ?"

Employment

- 2019–2022 **PhD Student**, Institut Camille Jordan, University Claude Bernard Lyon 1 and SCOR SE, Lyon.
- 2021–2022 **Lecturer**, Ecole Normale Supérieure, Lyon.
- 2020–2022 **Teaching assistant**, Institut Camille Jordan, University Claude Bernard Lyon 1, Lyon.
- 2017–2018 **Actuarial Analyst**, L'auxiliaire - www.auxiliaire.fr, Lyon.
Master Thesis: Stochastic reserving in decennial insurance through generalized linear models.
- 2016 **Internship**, Diacrisis - www.les-crisis.fr.
Financial and economical analysis.

Education

- 2019–2022 **PhD In Statistics**, Institut Camille Jordan, University Claude Bernard Lyon 1 and SCOR SE, Lyon & Paris.
Thesis supervised by V. Maume-Deschamps, E. Masiello and D. Rullière, under a CIFRE grant in partnership with SCOR SE. Subject : "Dependence structures and risk agregation in high dimensions". *Planned defence in June 2022*.
- 2018–2019 **Master 2 research in probability**, Ecole Normale Supérieure, Lyon, Auditing.
- 2015–2018 **Bachelor, Master and DU in Actuarial sciences**, Institut de Sciences Financières et d'Assurances, Lyon.
Mathematics applied to insurance and finance.
- 2012–2015 **Bachelor in Mathematics**, Université de Strasbourg, Strasbourg.

Teaching Activities

- Fall 2021 **Lecturer**, Eco. Dep. ENS Lyon, Lyon.
Statistical Inference, 36h lectures, 3rd year bachelor in economics.
- Fall 2020 & Fall 2021 **Teaching Assistant**, Math. Dep. Univ Lyon 1, Lyon.
Probability and Statistics, 2×30h tutorials, 2nd year bachelor in computer sciences.
- Fall 2020 **Teaching Assistant**, Math. Dep. Univ Lyon 1, Lyon.
Probability and Statistics, 30h tutorials, 3rd year bachelor in mathematics.

Research Activities

Published articles

- 2021 Laverny, O., Masiello, E., Maume-Deschamps, V., and Rullière, D. Estimation of multivariate generalized gamma convolutions through Laguerre expansions. *Electronic Journal of Statistics*, 15(2):5158 – 5202, 2021. doi:10.1214/21-EJS1918.
Laverny, O., Masiello, E., Maume-Deschamps, V., and Rullière, D. Dependence structure estimation using copula recursive trees. *Journal of Multivariate Analysis*, 185:104776, 2021. doi:10.1016/j.jmva.2021.104776.
- 2020 Laverny, O. Empirical and non-parametric copula models with the cort R package. *Journal of Open Source Software*, 5(56):2653, 2020. doi:10.21105/joss.02653.

Work in progress

- 2022 Laverny, O. Estimation of high dimensional Thorin measures through random projections. 2022.

Invited talks

- 2021 **Groupe de travail Actuariat et Risque Contemporains**. Internal modeling without copula: the beauty of Thorin classes., 03 2021. URL: <https://sites.google.com/site/gtactuariatrc/>.
- ASTIN 2021 Online Colloquium**. Estimation of multivariate generalized gamma convolutions, 05 2021. URL: https://www.actuaries.org/iaa/ASTIN_2021/.

10ème biennale française des mathématiques appliquées et industrielles, SMAI2021. Julia, the unique solution of an optimization problem, 04 2021. URL: <https://smi2021.math.univ-toulouse.fr/accueil/>.

Contributed talks

2022 **QUANTACT**. (Virtual) Estimation of multivariate generalized gamma convolutions through Laguerre expansions, 01 2022. URL: <http://quantact.uqam.ca/>.

2021 **MascotNum 2021**. Estimation of multivariate generalized gamma convolutions, 04 2021. URL: <https://www.gdr-mascotnum.fr/mascot21.html>.

Colloque jeunes probabilistes et statisticiens 2021. Estimation of multivariate generalized gamma convolutions through Laguerre expansions, 10 2021. URL: <https://jps-2021.sciencesconf.org/>.

52èmes Journées de Statistique / SFDS. (Covid cancelled) Construction of a copula estimator through recursive partitioning of the unit hypercube, 05 2021. URL: <https://jds2020.sciencesconf.org/>.

2020 **Séminaire des doctorants - Institut camille jordan**. (Covid cancelled) Copula estimation via machine learning, 06 2020. URL: <http://math.univ-lyon1.fr/spip.php?article92>.

Online International Conference In Actuarial Science, Data Science and Finance. Dependence structure estimation using Copula Recursive Trees, 04 2020. URL: <https://oica.univ-lyon1.fr/>.

Actuarial Colloquium Paris 2020. Cort: The Copula Recursive Tree, 05 2020. URL: <https://www.actuarialcolloquium2020.com/>.

Softwares

2021 Laverny, O. **Julia package `lrv/ThorinDistributions.jl`**: Tools to work with and around multivariate gamma convolutions. Mar 2021. doi:10.5281/zenodo.4644109.

2020 Laverny, O. **R package `lrv/cort`**: Classes and tools for some empirical and non-parametrical copula models. Dec 2020. doi:10.5281/zenodo.4301435.

Others

Languages

Native	Français	<i>Mother tongue</i>
Advanced	English	<i>Written & oral</i>
Intermediate	Esperanto	<i>Not practiced often</i>
Beginner	Deutsch	<i>Basic words and phrases only</i>
Fluent	C++	<i>Written only</i>

Computer skills

Day to Day	Julia, C++, R, Python, \LaTeX , git
Casual	Sh, Vba, HTML/CSS/JS/PHP/SQL

Interests

Free software, GNU/Linux, Violin making