Jorge Yslas Altamirano

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Lecturer in Actuarial Mathematics at the University of Liverpool with a PhD in Insurance and Economics from the University of Copenhagen. Research in matrix distributions, extreme value theory and applied probability, with applications to insurance pricing, risk modeling and survival analysis. Over four years of industry experience in consulting, pricing and risk management in both life and non-life insurance.

ACADEMIC POSITIONS

Jan 2022 – present **Lecturer in Actuarial Mathematics** Liverpool, UK
University of Liverpool

Mar 2021 – Dec 2021 **Postdoctoral Researcher** Bern, Switzerland
University of Bern

EDUCATION

Aug 2017 – Sep 2020 **PhD in Insurance and Economics** Copenhagen, Denmark
University of Copenhagen
Thesis: *Point process convergence of random walks and the estimation of multivariate heavy-tailed distributions* (link)
Supervisors: Thomas Mikosch and Mogens Bladt

Sep 2015 – Jun 2017 **MSc in Actuarial Mathematics** Copenhagen, Denmark
University of Copenhagen
Thesis: *Heavy-tailed phase-type distributions* (link)
Supervisor: Mogens Bladt

Aug 2008 – Jun 2011 **BSc in Actuarial Science** Mexico City, Mexico
National Autonomous University of Mexico (UNAM)
Awarded for one of the three highest GPAs of the 2008–2011 cohort

INDUSTRY EXPERIENCE

Oct 2020 – Feb 2021 **Actuarial Analyst** Munich, Germany
Allianz Global Corporate & Specialty SE

May 2014 – Jul 2015 **Financial Risk Analyst** Mexico City, Mexico
SURA Mexico

May 2011 – Apr 2014 **Actuarial Analyst** Mexico City, Mexico
Willis Towers Watson

SOCIETY OF ACTUARIES (SOA)

Exams	Exam MFE – Models for Financial Economics (Aug 2012) Exam FM – Financial Mathematics (Dec 2011) Exam P – Probability (Jul 2011)
Modules	Pre-Actuarial Foundations Module
VEE credits	Corporate Finance, Economics, and Applied Statistics

RESEARCH

Interests — Extreme value theory, applied probability, actuarial modeling, survival analysis, and statistical theory and applications.

Published peer-reviewed articles

[14] Alyafie, A., Constantinescu, C., & **Yslas, J.** (2026). Designing optimal bonus-malus systems under frequency-severity dependence via phase-type distributions. *Variance*, forthcoming.

[13] Bladt, M., Peralta, O., & **Yslas, J.** (2026). Assessing continuous common-shock risk through matrix distributions. *Scandinavian Actuarial Journal*, 2026(8), 745–772. DOI, arXiv

[12] **Yslas, J.** (2026). Phase-type frailty models: a flexible approach to modeling unobservable heterogeneity in survival analysis. *Scandinavian Actuarial Journal*, 2026(3), 295–323. DOI, arXiv

[11] Furrer, C., Sørensen, J.J., & **Yslas, J.** (2026). Bivariate phase-type distributions for experience rating in disability insurance. *European Actuarial Journal*, 16(1), 153–189. DOI, arXiv

[10] Bladt, M., Müller, A., & **Yslas, J.** (2026). matrixdist: An R package for statistical analysis of matrix distributions. *Annals of Actuarial Science*, 20(2), 217–251. DOI, arXiv

[9] Alyafie, A., Constantinescu, C., & **Yslas, J.** (2025). Evaluating transition rules for enhancing fairness in bonus-malus systems: An application to the Saudi Arabian auto insurance market. *Risks*, 13(1), 18. DOI

[8] Bladt, M., & **Yslas, J.** (2023). Robust claim frequency modeling through phase-type mixture-of-experts regression. *Insurance: Mathematics and Economics*, 111, 1–22. DOI, SSRN

[7] Bladt, M., & **Yslas, J.** (2023). Phase-type mixture-of-experts regression for loss severities. *Scandinavian Actuarial Journal*, 2023(4), 303–329. DOI, arXiv

[6] Albrecher, H., Bladt, M., Bladt, M., & **Yslas, J.** (2023). Continuous scaled phase-type distributions. *Stochastic Models*, 39(2), 293–322. DOI, arXiv

[5] Albrecher, H., Bladt, M., Bladt, M., & **Yslas, J.** (2022). Mortality modeling and regression with matrix distributions. *Insurance: Mathematics and Economics*, 107, 68–87. DOI, arXiv

[4] Bladt, M., & **Yslas, J.** (2022). Heavy-tailed phase-type distributions: A unified approach. *Extremes*, 25, 529–565. DOI, arXiv

[3] Albrecher, H., Bladt, M., & **Yslas, J.** (2022). Fitting inhomogeneous phase-type distributions to data: The univariate and the multivariate case. *Scandinavian Journal of Statistics*, 49(1), 44–77. DOI, arXiv

[2] Heiny, J., Mikosch, T., & **Yslas, J.** (2021). Point process convergence for the off-diagonal entries of sample covariance matrices. *Annals of Applied Probability*, 31(2), 538–560. DOI, arXiv

[1] Mikosch, T., & **Yslas, J.** (2020). Gumbel and Fréchet convergence of the maxima of independent random walks. *Advances in Applied Probability*, 52(1), 213–236. DOI, arXiv

Submitted manuscripts

[1] Bladt, M., & **Yslas, J.** (2026+). Cure models: from mixture to matrix distributions. *Preprint*. arXiv

In professional journals

[1] Alyafie, A., Constantinescu, C., & **Yslas, J.** (2023). An analysis of the current Saudi Arabian no-claim discount system and its adaptability for novice women drivers. *CAS E-Forum*, Spring (May). E-Forum. Winning paper of the 2023 CAS Ratemaking Call Paper Program.

SOFTWARE

Co-developer **matrixdist**: R/C++ package for the efficient use of matrix distributions in applied probability and statistics. Available on CRAN.

Developer **phfrailty**: R/C++ package for phase-type models as random effects, for frailty models and mixed Poisson regression. Available on GitHub.

RESEARCH FUNDING

2026 **LMS Invited Lecture Series 2026**. Co-PI, £6,000

2025 **CKER/CAS Individual Grant Competition**. *Designing Bonus-Malus Systems Under Frequency-Severity Dependence*. PI, US$14,000

2023/24 **ICS Specialist Support Fund**. *Women Drivers in Saudi Arabia*. PI, £6,200

TEACHING EXPERIENCE

Jan 2022 – present **Module leader** Liverpool, UK
University of Liverpool

- Statistical Methods in Insurance and Finance
- Financial Computing in R
- Financial and Actuarial Modelling in R (4 times; lecture notes)

Jul 2026 – Sep 2026 **Lecturer** Mexico City, Mexico
ITAM

- Stochastic Modeling (co-taught with Gerardo Hernández del Valle)

Sep 2017 – Nov 2019 **Teaching assistant** Copenhagen, Denmark
University of Copenhagen

- Econometrics 2: Statistical Analysis of Econometric Time Series (2 times)
- Basic Non-Life Insurance Mathematics

Aug 2014 – Jun 2015 **Lecturer** Mexico City, Mexico
UNAM

- Actuarial Mathematics for Life Insurance II
- Insurance Theory

Aug 2011 – Jun 2015 **Teaching assistant** Mexico City, Mexico
UNAM

- Actuarial Mathematics for Life Insurance I (3 times)
- Actuarial Mathematics for Life Insurance II
- Actuarial Mathematics for Non-Life Insurance (2 times)
- Probability II; Stochastic Processes; Insurance Theory

SUPERVISION

Doctoral students

Nov 2024 – present **Frederico Jorge Machado**, ISEG, Portugal. Project: "Insurance internal models". Co-supervised with Nuno Brites.

Mar 2022 – Nov 2025 **Asrar Alyafie**, University of Liverpool, UK (completed). Thesis: "Fair Pricing of Insurance for Women Drivers in Saudi Arabia". Co-supervised with Corina Constantinescu.

Master's students

Summer 2026 **Nisrin Albalawi**, University of Liverpool, UK. "Incorporating Bodily Injury Claims into the Saudi Bonus–Malus System"

Mar – Jul 2026 **Anna Koster**, VU Amsterdam, Netherlands. "Sex-Specific Effects of the COVID-19 Shock on Mortality Trends"

Mar – Jul 2026 **Nout van Nouhuys**, VU Amsterdam, Netherlands. "Four Philosophies of Conditional Tail Risk: Accuracy and Stability in VaR and Expected Shortfall Forecasting for Individual Equities"

Summer 2023 **Manuel Navarro**, University of Liverpool, UK. "Applications using conditional Monte Carlo for sums"

PEDAGOGICAL TRAINING

Nov 2026 – present **Postgraduate Diploma in Academic Practice** — Liverpool, UK
University of Liverpool
In progress

Oct 2022 – Mar 2024 **Postgraduate Certificate in Academic Practice** — Liverpool, UK
University of Liverpool
Awarded Fellowship of Advance HE (FHEA)

Nov 2017 **Introduction to University Pedagogy** — Copenhagen, Denmark
University of Copenhagen

ADMINISTRATIVE ROLES

Apr 2026 – present **XJTLU Link Tutor** — Liverpool, UK
University of Liverpool

Feb 2025 – present **IFAM Seminar Organizer** — Liverpool, UK
University of Liverpool

Oct 2022 – present **Programme Director, BSc Mathematics and Economics** — Liverpool, UK
University of Liverpool

EVENTS ORGANIZATION

Jun 2026 Co-organizer, LMS Invited Lectures 2026, University of Liverpool

Jun 2024 Organizer, Fair Insurance Pricing Workshop, University of Liverpool

REVIEWING

Journals	Applied Economics Letters; Applied Probability Journals; ASTIN Bulletin; Bernoulli; Linear and Multilinear Algebra; Scandinavian Actuarial Journal; Statistical Inference for Stochastic Processes; Statistics; Statistics and Risk Modeling; Stochastic Processes and their Applications

PRESENTATIONS

Invited talks

Aug 2026	*Global models for insurance losses via matrix distributions*. 60th Anniversary Webinar Series, Colegio Nacional de Actuarios (CONAC), Mexico
Jun 2026	*Global models for insurance losses via matrix distributions: the matrixdist R package*. EDC Brownbag Seminar, VU Amsterdam, Netherlands
May 2026	*Robust claim frequency modeling through phase-type mixture-of-experts regression*. Talks in Financial and Insurance Mathematics, ETH Zurich, Switzerland
Feb 2026	*Heavy-tailed phase-type distributions*. Probability Seminar, University of Manchester, UK
Dec 2025	*Assessing continuous common-shock risk through matrix distributions*. Data Analytics in Finance Workshop, University of Liverpool, UK
Nov 2025	*Robust claim frequency modeling through phase-type mixture-of-experts regression*. Random Seminars, ITAM, Mexico City, Mexico
Oct 2025	*Point process convergence of random walks*. CIMAT Seminar, CIMAT, Guanajuato, Mexico
Jul 2025	*Evaluating transition rules for enhancing fairness in bonus-malus systems: An application to the Saudi Arabian auto insurance market*. 60th Actuarial Research Conference, Toronto, Canada
Jan 2025	*Cure models: from mixture to matrix distributions*. ASMF Seminar, University of Amsterdam, Netherlands
Aug 2024	*Heavy-tailed phase-type distributions*. Risks Seminar, ITAM, Mexico City, Mexico
Aug 2024	*Point process convergence of random walks*. IIMAS Seminar, UNAM, Mexico City, Mexico
Feb 2023	*Point process convergence of random walks*. Stochastics Seminar, University of Liverpool, UK
Feb 2023	*Point process convergence of random walks*. Financial & Actuarial Seminar Series, Xi'an Jiaotong-Liverpool University, Suzhou, China
Aug 2022	*Phase-type regression models*. Seminar in Insurance and Economics, University of Copenhagen, Denmark
Mar 2021	*Inhomogeneous phase-type distributions: Fitting and applications to survival analysis*. Post/Doctoral Seminar in Mathematical Finance, ETH Zurich, Switzerland

Conference and seminar talks

Jul 2026	*Designing optimal bonus-malus systems under frequency-severity dependence via matrix distributions*. 29th International Congress on Insurance: Mathematics and Economics (IME), Seoul, South Korea
Jun 2026	*Assessing continuous common-shock risk through matrix distributions*. Scandinavian Actuarial Conference 2026, Stockholm, Sweden

Dec 2025	*Robust claim frequency modeling through phase-type mixture-of-experts regression*. XJTLU, Suzhou, China
Jul 2025	*Phase-type frailty models: a flexible approach to modeling unobservable heterogeneity in survival analysis*. 28th IME Congress, Tartu, Estonia
Dec 2024	*Robust claim frequency modeling through phase-type mixture-of-experts regression*. FAMiLLY 2024 Workshop, York, UK
Sep 2024	*Cure models: from mixture to matrix distributions*. European Actuarial Journal Conference 2024, Lisbon, Portugal
Aug 2024	*Robust claim frequency modeling through phase-type mixture-of-experts regression*. Scandinavian Actuarial Conference 2024, Copenhagen, Denmark
Jan 2024	*Heavy-tailed phase-type distributions*. XJTLU–UoL–XJTU Joint Workshop, Suzhou, China
Jul 2023	*Bivariate phase-type distributions for experience rating in disability insurance*. 26th IME Congress, Edinburgh, UK
Feb 2023	*Robust claim frequency modeling through phase-type mixture-of-experts regression*. 2023 PARTY, Valencia, Spain
Aug 2022	*Phase-type mixture-of-experts regression for loss severities*. European Actuarial Journal Conference 2022, Tartu, Estonia
Jul 2022	*Phase-type mixture-of-experts regression for loss severities*. 25th IME Congress
Dec 2021	*Phase-type regression models*. IMSV Institute Seminar, University of Bern, Switzerland
Nov 2021	*Heavy-tailed phase-type distributions: A unified approach*. Regular Variation and Related Themes, Dubrovnik, Croatia
Jul 2021	*Continuous scaled phase-type distributions*. Bernoulli-IMS 10th World Congress in Probability and Statistics
Jul 2021	*Continuous scaled phase-type distributions*. 24th IME Congress
Sep 2020	*Fitting inhomogeneous phase-type distributions to data*. Workshop on Advances in Applied Probability, Copenhagen, Denmark
Aug 2020	*Fitting inhomogeneous phase-type distributions to data*. Bernoulli-IMS One World Symposium 2020
Apr 2020	*Fitting inhomogeneous phase-type distributions to data*. Online International Conference in Actuarial Science, Data Science and Finance
Jul 2019	*Gumbel and Fréchet convergence of the maxima of independent random walks*. 11th International Conference on Extreme Value Analysis, Zagreb, Croatia. *Honorable mention: Excellent young researcher paper in the category "Theory"*

RESEARCH VISITS

Nov 2026	Department of Mathematics and Statistics, Boston University, USA. Host: Guangqu Zheng
Jul – Sep 2026	Department of Actuarial Science, ITAM, Mexico. *Guest Professor*
Nov 2025	Department of Statistics, ITAM, Mexico. Host: Laura Battagliola
Aug 2024	Department of Actuarial Science, ITAM, Mexico. Host: Oscar Peralta
May 2024	Department of Mathematical Sciences, University of Copenhagen, Denmark. Host: Christian Furrer
Jun 2023	Department of Mathematical Sciences, University of Copenhagen, Denmark. Host: Martin Bladt
Aug 2022	Department of Mathematical Sciences, University of Copenhagen, Denmark. Host: Christian Furrer
Nov 2019 – Feb 2020	Department of Actuarial Science, HEC Faculty, University of Lausanne, Switzerland. Host: Hansjörg Albrecher

OTHER CONFERENCES AND SCHOOLS ATTENDED

Apr 2024	Heavy Tails in Machine Learning, London, UK
Jun 2021	Extreme Value Analysis 2021
Jan 2020	Lausanne-Lyon University Meeting 2020, Lyon, France
Jun 2019	Data Science Summer School, Palaiseau, France
Sep 2018	Workshop on New Developments in Econometrics and Time Series, Copenhagen, Denmark
Jun 2018	Self-Similarity, Long-Range Dependence and Extremes, Oaxaca, Mexico
Apr 2018	Statistics in Complex Systems, Copenhagen, Denmark
Jul 2010	CIMAT III Summer School in Probability and Statistics, Guanajuato, Mexico

PROFESSIONAL DEVELOPMENT

Oct 2014	Diploma course in Solvency II, UNAM
Oct 2013	Diploma course in Corporate and Stock Market Finance, UNAM

LANGUAGES AND SOFTWARE

Languages	Spanish (native), English (full professional proficiency)
Software	R, C/C++, Python, Matlab, LaTeX