ARTHUR CHARPENTIER

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Personal

Canadian & French citizen – Bilingual (French-English) – 3 children

Research Interests

Predictive Modeling, Insurance, Mathematical Economics, Networks, Statistics & Econometrics, Machine Learning & Algorithms, Climate & Catastrophe Modeling, Extremes & Dependence, Inequalities, Discrimination & Fairness.

Bio

Work Experience

Kyoto University 京都大学 — Kyoto 京都, Japan 日本
Visiting Professor, Mathematics Department — *2025-2026*
- *Invited at Research Institute for Mathematical Sciences (数理解析研究所)*

Université du Québec à Montréal (UQAM) — Montréal, Canada
Full Professor, Mathematics Department — *since 2018*
- *Member of MSc & PhD Admission Selection Committee*
- *Former member of BSc Supervising committee (in Actuarial Science)*
- *Teaching STT1000, STT3030, MAT4681, STT5100, ACT6100 (BSc)*
  INF7100, MAT7381, MAT998P (graduate)
  Teaching duty : 4 courses per year (156 hours)
- *Quantact Member of the Scientific Committee & Seminar Organization*

Université de Rennes — Rennes, France
Full Professor (Professeur des Universités), Faculty of Economics — *since 2017*
- *Member of CREM (UMR 6211 CNRS)*
  Teaching duty : 192 hours per year
- *Currently secondment ("détachement") at UQAM*

Institut des Actuaires — Paris, France
Director, Data Science for Actuaries Program — *2015-2018*
(with R.Élie and J.Jakubowicz)
- *Continuing education for qualified actuaries on machine learning and data science*

Université de Rennes — Rennes, France
Assistant Professor (Maître de Conférences), Faculty of Economics — *2014-2017*
- *Member of the faculty board*
  Teaching duty : 192 hours per year
- *Teaching Statistics, Networks, Mathematical Finance and Portfolio Management*

Université du Québec à Montréal — Montréal, Canada
Professor, Mathematics Department — *2011-2014*
- *Member of BSc Supervising committee (in Actuarial Science)*
- *Member of Recruiting Committees (Statistics and Actuarial Science)*
- *Teaching ACT2040, ACT2121, ACT6420, MAT7381, MAT8181, MAT8595, MAT8886*
  Teaching duty : 4 courses per year (156 hours)

Université de Montréal Montréal, Canada
Visiting Professor, Mathematics Department *2010-2011*
- *Teaching STT2700, STT6705*

École Polytechnique ▸ Palaiseau, France
Professeur Chargé de Cours, Economics Department *2008-2010*
- *Teaching ECO431, ECO550, ECO556, ECO568*

Université de Rennes ▸ Rennes, France
Assistant Professor - Maître de Conférences, Faculty of Economics *2007-2010*
- *Co-director of the Econometrics & Statistics MSc*
  Teaching duty : 192 hours per year
- *Teaching Econometrics, Mathematical Statistics, Insurance Modeling*

École Nationale de la Statistique et d'Analyse de l'Information ▸ Ker Lann, France
ENSAI, Lecturer *2006-2007*
- *Teaching Numerical techniques in finance, copulas and risk measures*

École Nationale de la Statistique et de l'Administration Économique ▸ Malakoff, France
ENSAE, Lecturer *2002-2006*
- *Teaching Non-life Insurance, Reinsurance and Extreme Value*
- *Institute of Actuaries correspondent, Jury for actuarial thesis*

French Federation of Insurers ▸ Paris, France
France Assureurs (ex FFA, FFSA), Statistics department *2001-2002*
- *Publications on Cat Bonds and Insurers Solvency*

AXA General Insurance Hong Kong Limited 安盛保險有限公司 ▸ Hong Kong 香港, 中国
Pricing and Reserving Actuary *1999-2001*

Exane ▸ Paris, France
Fixed Income Research Department *1998-1999*

Education

Université de Rennes ▸ Rennes, France
Habilitation à diriger des recherches *2016*
- *Contributions to dependence modeling*

Reviewers : N. El Karoui, P. Embrechts & M. Hoffmann
Jury : K. Antonio, D. Florens, J. Garrido, O. L'Haridon & S. Loisel

Katholieke Universiteit Leuven (KU Leuven) ▸ Leuven, Belgium
Doctor in de Wetenschappen Wiskunde - PhD in Applied Mathematics *2006*
- *Dependence structures and limiting results,with applications in finance and insurance*

Supervisors : J. Beirlant & M. Denuit
Jury : J. Dhaene, A.L. Fougères, I. Gijbels, C. Gouriéroux & W. Schoutens

École Nationale de la Statistique et de l'Administration Économique ▸ Malakoff, France
ENSAE, MSc. in statistics & actuarial science *1999*

Université Paris Dauphine ▸ Paris, France
DEA MASE, MSc. in mathematical economics & finance *1999*

Affiliations & Fellowships

Current
CRM (Centre de Recherche Mathématiques de Montréal), StatLab, CRI^{2}GS
Réseau de recherche sur le numérique, Réseau de recherche en sécurité routière du Québec
OBVIA (Observatoire international sur les impacts sociétaux de l'IA ▸),

Previous
CREM, GERAD, IRT St Exupery-MILA, CREST, École Polytechnique, HumanIA, Quantact

Adjunct Professor (professeur associé)
Université Laval ▸ *(Québec, Canada)* — *since 2022*
University of Waterloo ▸ *(Ontario, Canada)* — *since 2020*

Louis Bachelier Fellowship — Paris, France
Academic Fellow ▸ — *since 2021*

(French) Institut des Actuaires Fellowship — Paris, France
Member of the International Actuarial Association (IAA) — *since 2003*
- *Member of working groups, anticipate IA impacts, big data, enterprise risk management*

Grants

Financial Grants

SCOR Foundation ▸ — 300,000€
Fairness of predictive models: an application to insurance markets, PI Single (100%) — *2023-2026*
Newsletter #1 (Oct 23-Mar 24) #2 (Apr-Sep 24) #3 (Oct 24-Mar 25) #4 (Apr-Sep 25)

Chaire Thélem/ILB *Data Science and Insurance Fraud Detection* — 10,000€
co-PI, with Marie-Pier Côté (50%) — *2023*

Chaire ACTIONS *BNP-Cardif, Institut des Actuaires & ILB* ▸ — 1,500,000€
Actuaries for Change in Technologies and Insurees Opportunities for Next Steps — *2024-2029*
associated researcher, PI: Yahia Sahli & Denys Pommeret (1%)

Chaire PARI *ILB-ENSAE-Sciences Po* ▸ — 1,000,000€
Programme de recherche sur l'appréhension des risques et des incertitudes — *2024-2029*
associated researcher, PI: Pierre François & Laurence Barry (1%)

AXA Research Fund ▸ — 200,000€
Joint research initiative, PI Single (100%) http://jridata.github.io/ — *2020-2022*

Natural Sciences and Engineering Research Council of Canada (NSERC) ▸ — $3,000,000
Emerging Infectious Diseases Modelling Initiative (MfPH), Fields-CRM Group (2%) — *2020-2022*

MITACS (EY) — $30,000
Insurance and fairness — *2021-2022*

Natural Sciences and Engineering Research Council of Canada (NSERC) ▸ — $140,000
New algorithms and new data for insurance : impact of machine learning techniques... — *2019-2025*
NSERC-CRSNG, Discovery Grant, PI Single (100%)

Agence Nationale pour la Recherche — 525,000€
ORDINEQ project Ordinal and Multivariate Inequalities (5%) — *2015-2019*

Institut Louis Bachelier ▸ — 558,000€
ACTINFO Research Chair, co-PI, with Romuald Élie (50%) — *2015-2018*

PEPS MoMIS, CNRS — 15,000€
co-I, with Fréderic Giroire (30%) — *2015*

Natural Sciences and Engineering Research Council of Canada (NSERC) ▸ — $70,000
Univariate and Multivariate Risk Measures — *2012-2015*
NSERC-CRSNG, Discovery Grant, PI Single (100%)

Institut Louis Bachelier — 10,000€
Chaire Groupama-Dauphine, Research Grant (100%) — *2010*

Agence Nationale pour la Recherche 500,000€
AST&Risk Approches spatio-temporelles pour la modélisation du risque (5%) *2008-2012*

Institut Louis Bachelier 24,000€
Chaire AXA-ENSAE(100%) *2010*

Duties

Journal, Books & Association Boards

Canadian Statistical Sciences Institute (CANSSI) Canada
Member of the Board of Directors *2022-2025*

Chapman & Hall/CRC Series in Actuarial Science
Series Editor Board *since 2024*

European Actuarial Journal
Co-Editor *since 2025*

Journal of Risk and Insurance
Senior Editor *2022–2025*

Risks
Member of the Editorial Board *since 2019*

Astin Bulletin Editorial Board
Journal of the International Actuarial Association, member of the Editorial Board *since 2018*

Economics Bulletin
Member of the Editorial Board *2021-2022*

European Actuarial Journal
Associate Editor *2014-2022*

Selected recent services

Faculty of Science, UQAM Montréal, Canada
Member of the Research Committee *2018-2024*

MSc & PhD Program in Mathematics, UQAM Montréal, Canada
Member of the supervising committee *2021-2025*

Bachelor Program in Actuarial Science, UQAM Montréal, Canada
Member of the supervising committee *2018-2021*

Conseil de Faculté, Université de Rennes Rennes, France
Member of the faculty board *2016-2018*

Selected evaluation committees

NSERC-CRSNG - Discovery Horizons (DH) Ottawa, Canada
Program Fit Advisor (PFA) *2026-2029*

NSERC-CRSNG - Discovery Grants (DG) Ottawa, Canada
Member of the Mathematics and Statistics - Evaluation Group (EG) 1508 *2022-2025*

FRQNT (Québec Research Fund) Grants Québec, Canada
Member of the jury (B1/B2/B3-03E), Master, PhD, Postdocs *2019-2023*

HCÉRES Paris, France
Haut Conseil de l'évaluation de la recherche et de l'enseignement supérieur
Evalution committee president *2020*

MIAI Cluster IA, Université Grenoble Alpes Grenoble, France
Multidisciplinary Institute in Artificial intelligence
Evalution committee *2025*

Data & Code

Insurance Pricing Game AICrowd
http://pricing-game.com/ with A. Farzanehfar & F. Houssiau (Imperial College) *2020-2021*

CASDataset 1.2-0 R
CASDataset R package doi:10.57745/P0KHAG with C. Dutang (ENSIMAG) *since 2015*

Dissemination

Blue sky account @freakonometrics.bsky.social
Scientific dissemination *since 2024*

Mastodon account @freakonometrics@mastodon.social
Scientific dissemination, ∼ 6,700 followers *since 2022*

Twitter account @freakonometrics
Scientific dissemination, ∼ 28,100 followers *2010-2022*

Hypotheses Blog Notebook https://freakonometrics.hypotheses.org/
Scientific blogging *since 2008*

- *Quinquennat Macron : quelle évolution du droit des assurances?* *Dalloz Actualité 2022*
- *Rapport Langreney : lutter contre le désengagement des assureurs dans la ...* *Dalloz Actualité 2022*
- *Arthur Charpentier on Freakonometrics, Machine Learning and Big Data* *Economic Rockstar 2018*
- *Les Cat Bonds ont de l'avenir* *France Culture 2018*
- *Coupe du Monde 2018 : des chercheurs de Rennes prévoient la victoire de la France* *RTL 2018*
- *Peut-on vraiment prévoir la probabilité de gagner une élection présidentielle?* *La Tribune 2017*
- *Le casino des catastrophes* *La Revue Dessinée 2016*
- *How social media usage does and does not predict protests* *Washington Post, 2015*
- *You can vote twice! The many political appeals of proxy votes in France* *Washington Post, 2014*

see https://freakonometrics.github.io/dissemination/ for more details

Interviews

- *Insuring an uninsurable world - the pricing actuary's Mission Impossible?* *Insurance ERM 2025*
- *Modelling: At a Crossroads* *The Actuary 2025*
- *IA et assurance* *La Lettre de l'Assurance 2024*
- *Assurances : des collectivités désemparées face aux effets du dérèglement climatique* *Politis 2024*
- *Actuarial ethics and the future of the profession* *The European Actuary 2024*
- *L'indispensabile e controverso uso dell'intelligenza artificiale* *Da Il Sole 24 Ore, 2024*
- *Podcast: IA, biais et éthique en assurance* *Nexialog 2023*
- *Quand les assurances n'assurent plus, un autre effet du changement climatique* *RTS (rts.ch) 2023*
- *Qu'est-ce que l'assurance? Interview d'un économiste de l'assurance* *Dalloz actualité 2022*
- *Algorithmes : garder le contrôle* *L'Actuariel (44) 2022*
- *Coronavirus : un pic très net de mortalité en France depuis le 1er mars...* *Le Monde 2020*
- *#fakenews : non, l'IA ne peut pas prédire les émeutes* *Sciences & Vie 2019*
- *Les données actuarielles des assureurs, un trésor pour la connaissance client?* *Les Echos 2018*
- *Les risques en économie : le mécanisme de l'assurance* *It's the Economy, Stupid 2018*

Opinion columns

- *« Les événements climatiques extrêmes ne sont plus des risques marginaux...* *Le Monde 2025*
- *À la fin, qui prendra en charge le coût des assurances ?* *The Conversation | Fr 2025*
- *Des primes d'assurance personnalisées moins cher grâce à l'IA ?* *The Conversation | Ca 2025*
- *Incendies à Los Angeles : « La situation actuelle menace non seulement le mar...* *Le Monde 2025*
- *Moral maze: Ethics and discrimination in machine learning* *The Actuary 2025*
- *Ni les assureurs ni les gouvernements ne sont préparés à l'augmentation expon...* *Le Monde 2023*

Selected expertise

France Stratégie - Cabinet du Premier Ministre Paris, France
Membre du groupe de travail sur la mutualisation des risques climatiques *2024-2025*

International Monetary Fund (IMF) Washington DC, US
Assessing Central Bank Solvency *2021*

International Fund for Agricultural Development (IFAD) United Nations Roma, Italia
NLP and Topic Modeling *2020-2021*

HMG Finance Paris, France
First-In First-Out (FIFO) vs Last-In First-Out (LIFO), perpertual rents *2012*

Scientific Advisor

NeuroDrive, Krakn Behavioural krakn.fr, Paris, France *since 2025*
Insightbounds, insightbounds.com, Lloyd's Lab, London, U.K. *since 2025*
Actuariat durable et IA, Chaire ILB, institutlouisbachelier.org Paris *since 2025*
Paris Agreement Research Commons, parc-research.org, Paris, France *since 2025*
Nexialog, nexialog.com, Paris, France *since 2023*
AIvidence, ai-vidence.com, Playground Paris-Saclay, France *since 2023*

Academic activities

Recent conferences organization

Mathematical Advances on Emerging Risks Merida, Mexico
with D. Hernández, D. Possamai, A. Réveillac, J. Ricalde Guerrero, T. Peyrat, C. Hillairet, (scientific & organization committee) *2026*

Workshop on Sensitivity Analysis and Interpretable Machine Learning Montréal, Canada
with N. Bousquet, M.P. Côté, F. Gamboa, M. Il Idrissi, B. Iooss, Y. Pequignot, (scientific & organization committee) *2026*

Confidence and Fairness: Scientific Foundations in AI and Risk Paris, France
with A. Ly (scientific & organization committee) *2025*

Workshop on Probability and Machine Learning Guanajuato, Mexico
with H. Guérin, D.M. López, M. Morales, J.C. Pardo, V. Rivero *2025*

6th Insurance Data Science conference Hannover, Germany
(scientific committee) *2025*

2nd Workshop of Fairness and Discrimination in Insurance Québec, Canada
with M.-P. Coté (scientific & organization committee) *2024*

5th Insurance Data Science conference Stockholm, Sweden
(scientific committee) 2024

Networks, Games and Risk Montréal, Canada
with M. Ghossoub (scientific & organization committee) 2023

5th Insurance Data Science conference London, UK
(scientific committee) 2023

Modeling of Infectious Diseases Colloquium CRM-Fields, Canada
with B. Nasri & H. Guérin (scientific & organization committee) 2023

Association for the Development of Research in Economics and Statistics Paris, France
Annual Doctoral Conference of ADRES (scientific committee) 2022-2023

Workshop of Fairness and Discrimination in Insurance Québec, Canada
with M.-P. Coté (scientific & organization committee) 2022

Emerging Insights in Insurance Statistics BIRS, Banff, Canada
with E. Valdez, J. Cao & H. Jeong (scientific & organization committee) 2022

MLISTRAL Machine Learning in Insurance, CIRM Marseille, France
(scientific committee) 2022

4th Insurance Data Science conference Milano, Italia
(scientific committee) 2022

Journées de la Statistique Lyon, France
SFdS (Société Française de Statistique) Annual Meeting (scientific committee) 2022

3rd Insurance Data Science conference online
with M. Gesmann, S. Pesenti & A. Tsanakas (scientific & organization committee) 2021

36th Meeting of the Canadian Econometric Study Group Montréal, Canada
Machine Learning Econometrics, at UQAM (scientific committee) 2019

Atlantic Causal Inference Conference Montréal, Canada
University McGill (scientific committee) 2019

2nd Insurance Data Science conference ETH Zürich, Switzerland
with M. Gesmann & A. Tsanakas (scientific committee) 2019

Selected presentations at conferences and workshops

10th Annual Global Congress of Knowledge Economy (GCKE) Osaka 大阪市, Japan
Disentangling Illegitimate and Indirect Discriminations (invited speaker) 2025

60th Actuarial Research Conference York, Canada
Balance and calibration (invited speaker) 2025

Chaire ACTIONS Paris, France
Spectrum of Fair Premiums (keynote speaker) 2025

Journée d'Économétrie Appliquée Montpellier, France
Calibration of Probabilistic Scores (invited speaker) 2025

ACPR/Banque de France - Télécom Paris Paris, France
Fairness in Insurance (invited speaker) 2025

Canadian Econometrics Study Group (CESG) Toronto, Canada
Calibration of scoring functions (invited speaker) 2024

Statlab CRM, Université Laval Québec, Canada
Algorithmic fairness with optimal transport (invited speaker) 2024

Mathematical Foundations of AI Workshop Sorbonne Center for AI, Paris, France
Optimal transport and fairness ... (keynote speaker) *2024*

Colloque l'assurance face à ses ruptures (CCIC) Cerisy, France
Certitudes collective et incertitudes individuelles, les données ... (invited speaker) *2024*

Workshop on decentralized insurance and risk sharing Chicago, IL, US
Collaborative insurance, unfairness and discrimination (invited speaker) *2024*

6th edition of the European Actuarial Journal Conference Lisbon, Portugal
Calibration of insurance models *2024*

27th International Congress on Insurance: Mathematics & Economics Chicago, IL, US
Optimal transport and Wasserstein barycenter for algorithmic fairness *2024*

Optimization Days Montréal, Canada
Market Pricing with Reinforcement Learning *2024*

Optimal Transport Workshop Institut d'Etudes Scientifiques (IES), Cargèse, France
Optimal transport for fairness (invited) *2024*

Journée d'étude sur le blanchiment et la fraude Nîmes, France
L'intelligence artificielle comme instrument de lutte contre le blanchiment (invited) *2024*

6th Insurance Data Science Conference Stockholm, Sweden
Optimal transport for fairness with multiple sensitive attributes *2024*

Actuarial Science Workshop, SSC Annual Conference Carleton Univ., Ottawa, Canada
Optimal transport for fairness, in insurance (invited speaker) *2023*

Foundations and Applications of Decentralized Risk Sharing KU Leuven, Belgium
Risk sharing on irregular networks (invited speaker) *2023*

16th Annual Conference of Thailand Econometric Society Chiang Mai เชียงใหม่, Thailand
Quantifying discrimination and fairness... (invited speaker) *2023*

6th International Econometric Conference of Vietnam Thành phố Hồ Chí Minh, Vietnam
Causal inference with optimal transport (invited speaker) *2023*

Montréal AI Symposium (MAIS2022) Montréal, Canada
Insurance, fairness and discrimination *2022*

Workshop on Impacts of Climate Change Fields Institute, Toronto, Canada
Catastrophic risks and insurance (invited speaker) *2022*

Deutsche Gesellschaft für Versicherungs- und Finanzmathematik (DGVFM) Deutschland
A fair pricing model via adversarial learning (invited speaker) *2022*

20 ans du Master d'Actuariat Universtié Dauphine, Paris
Climate risk and insurance fairness (invited speaker) *2022*

Simulation & IA 2022 Cargèse, Universita di Corsica, France
Simulations and risk (keynote) *2022*

Actuarial Sciences and Applications CIRM, Luminy, France
Fairness in insurance pricing (keynote) *2022*

CMStatistics King's College, London, UK
Modeling Joint Lives within Families (invited speaker) *2021*

Emeritaat Jan Beirlant Leuven, Belgium
Extended Pareto distribution and applications (invited speaker) *2021*

Justice sociale, l'équité et les discriminations dans les systèmes algorithmiques CNRS
Assurance et discrimination (invited speaker) *2021*

IAA (International Actuarial Association) Online Joint Section Colloquium
Individual risks and collective decisions (invited speaker) *2021*

Institut Universitaire de France (IUF) Conference Le Mans, France
Risque de pandémie, pertes d'exploitation et incertitudes (invited speaker) *2021*

5e Conférence annuelle PANORisk Le Mans, France
Autocalibration and Insurance Pricing (invited speaker) *2021*

SSC (Statistical Society of Canada) Annual Conference Canada
Autocalibration & Premium Calculations (invited session) *2021*

IME (Insurance: Mathematics & Economics) Annual Conference Champaign, Illinois, US
Autocalibration & Premium Calculations (and panel discussion) *2021*

ASTIN Annual Conference Orlando, Florida, US
Autocalibration & Premium Calculations *2021*

MODCOV19-CNRS Paris, France
Modèles épidémiologiques pour analyse coût-efficacité sous incertitude (invited speaker) *2020*

Machine learning for economists and applied social scientists Hallifax, Canada
Machine Learning in Actuarial Science & Insurance (plenary speaker) *2020*

Actuarial and Financial Mathematics Conference Brussels, Belgium
Insurance Pricing in Competitive Markets (invited speaker) *2020*

Online International Conference in Actuarial science and finance Lyon, France
Modeling Joint Lives within Families *2020*

Risk Analytics Conference Chicago, US
Actuarial Pricing and Competition, University of Illinois (keynote speaker) *2019*

UCSB InsurTech Summit Santa Barbara, US
Insurance Pricing in Competitive Markets (invited speaker) *2019*

Natural Catastrophe Economics Workshop Zürich, Switzerland
Assessing Probabilities with Climate Change (invited speaker) *2019*

XXVIIIth International Biometric Conference Barcelona, España
Collaborative Genealogical Data in Demography (invited session) *2018*

European R Users Meeting Budapest, Hungary
Collaborative Genealogical Data in Demography (invited speaker) *2018*

Ecole Thématique sur l'Evaluation des Politiques Publiques Aussois, France
Evaluation du prejudice corporel en assurance automobile (invited speaker) *2018*

Big data empirics and policy analysis, Bank of England London, UK
Insurance: Risk Pooling or Price Segmentation (keynote speaker) *2017*

Artificial Intelligence for fintech and insurtech IHP, Paris, France
Insurance Pricing and Competition (invited speaker) *2017*

New challenges in the measurement of economic inequalities Marseille, France
Extended Pareto Models and Incomes (invited speaker) *2017*

Cartostats Université Paris Diderot, France
La Ville en Économie (invited speaker) *2017*

Dependence Modelling with Applications Athens Αθήνα, Greece
Insurance Pricing and Competition (invited speaker) *2017*

Comprendre et Anticiper la Révolution du Numérique en Assurance Caen, France
Assurance et Responsabilité (invited speaker) *2017*

Statistical Learning and Data Science Erasmus University, Rotterdam, Nederland
Quantiles and Expectiles (invited speaker) *2017*

Sciences XXL INED, Paris, France
Collaborative Data in Genealogy (invited speaker) *2017*

3rd International MACroeconomics workshop (IMAC) Rennes, France
From Micro to Macro (invited speaker) *2016*

Ordinal and Multidimensional Inequalities Montpelier, France
Pareto Models and Incomes (invited speaker) *2016*

Droit des données personnelles Amiens, France
Assurance & RGPD (règlement général sur la protection des données) (invited speaker) *2016*

3rd EAJ Conference (European Actuarial Journal) Lyon, France
Big Data and Insurance (invited speaker) *2016*

International Conference on Applied Business and Economics Nanterre, France
Natural Catastrophes and Governement Intervention *2016*

Big Data : la recherche s'expose Paris, France
Big Data and Insurance (invited speaker) *2016*

Centre for Central Banking Studies Bank of England, London, UK
Big Data and Insurance (keynote speaker) *2016*

Asociación Española de Gerencia de Riesgos y Seguros Barcelona, España
Machine Learning and Insurance (keynote speaker) *2016*

Big Data & Environment Buenos Aires, Argentina
Impact of time Granularity on Statistical Modeling (invited speaker) *2015*

IA|BE Summer School Louvain, Belgium
Machine Learning and Insurance (keynote speaker) *2015*

ACP meeting Leuven, Belgium
Big and Small Data in Insurance (invited speaker) *2015*

Journées de Statistiques Lille, France
Probit transformation for nonparametric kernel estimation of the copula density *2015*

22nd International Forecasting Financial Markets Conference Rennes, France
Copulas and Finance *2015*

Insurance & Finance Colloquium Le Mans, France
Risk Measures and Pareto Models *2015*

R in Insurance Conference London, UK
Getting into Bayesian Wizardry... with the eyes of a muggle actuary (keynote speaker) *2014*

SSC annual conference Toronto, Canada
Risk Measures and Pareto Models (invited session) *2014*

Mathematical Finance Days HEC Montréal, Canada
Risk Measures and Pareto Models *2014*

World Social Science Forum (UNESCO) Montréal, Canada
Academic Blogging (invited session) *2013*

Mathematical Finance Days HEC Montréal, Canada
Quantiles Estimation from Heavy Tailed Distribution *2013*

6th R/Rmetrics Summer School on Computational Finance Meielisalp, Switzerland
Actuarial Science with R (invited speaker) *2012*

Journées de la Société Canadienne de Sciences Économiques Mont Tremblant, Canada
Modeling dynamic incentives an application to basketball *2012*

Québec-Ontario Workshop on Insurance Mathematics Montréal, Canada
Quantiles Estimation from Heavy Tailed Distribution *2012*

Mathematical Finance Days HEC Montréal, Canada
Fast Computations on Binomial Trees *2012*

Journées de la Société canadienne de sciences économiques Sherbrooke, Canada
Insurance of Natural Catastrophes When Should Government Intervene? *2011*

Changement climatique et gestion des risques Lyon, France
Modeling heat-waves: return period for non-stationary extremes *2011*

Journées d'Etudes Statistique Luminy, France
Copulas, Insurance and Risk Measures (invited speaker) *2010*

IA-Lyon Summer School Lyon, France
Solvency II' newspeak 'one year uncertainty for IBNR' : the boostrap approach *2010*

Financial Risks International Forum Paris, France
Multiple Risk Measures *2010*

Assessment and Mitigation of Emerging Risks Paris, France
Emerging risks: an actuarial perspective *2009*

R.I.S.K. Symposium Paris, France
Incertitude des régimes des retraites *2009*

Workshop Finance & Insurance Sao Paulo, Brasil
Estimation of quantile related risk measures (invited speaker) *2009*

Workshop on Actuarial Science Belo Horizonte, Brasil
IBNR and quantification of uncertainty *2009*

7th International Workshop on Rare Event Simulation (RESIM) Rennes, France
Optimal Reinsurance with ruin probability target *2008*

Deutsche Mathematiker-Vereinigung, Humboldt-Universität Berlin, Deutschland
Estimating (properly) copula densities in tails *2007*

Conference Insurance Mathematics & Economics Leuven, Belgium
Extremes for Archimedean copulas *2006*

Extreme Values, Copulas and Applications Day, UdeM Montréal, Canada
Estimating (properly) copula densities in tails *2005*

Conference Insurance Mathematics & Economics Québec, Canada
Can one model natural hazards independently *2005*

XXXVIèmes Journées de statistique Montpellier, France
Distribution limite des structures de dépendance dans des processus de défauts *2004*

3rd Conference in Actuarial Sci- ence & Finance on Samos Samos Σάμος, Greece
Extreme and dependence, a copula approach *2004*

Dependence Modelling: Statistical theory and applications Québec, Canada
Limiting dependence structure for credit defaults *2004*

Statistical Issues in Actuarial Risk Modelling, Eurandom Eindhoven, Nederland
Dependence in tail distributions *2003*

XXXVIIIèmes Journées de statistique Clamart, France
Extremes for Archimedean copulas *2003*

Conference Insurance Mathematics & Economics Lyon, France
Tail distribution and dependence measures *2003*

Selected talks at academic seminars

Tsinghua University, 清华大学	*Haidian, Beijing 海淀区, China 中华人民共和国, 2026*
Séminaire Chaire PARI	*Paris, 2025*
University of Tokyo, 東京大学	*Bunkyō, Tokyo 文京区, Japan 日本, 2025*
University of Toronto	*Toronto, Canada, 2025*
CIMAT Colloquium	*Guanajuato, Mexico, 2025*
HEC Lausanne & UNIL	*Lausanne, Switzerland, 2025*
Københavns Universitet	*Københavns, Denmark, 2024*
Séminaire de modélisation financière de Paris, Université Paris Sorbonne	*Paris, France, 2024*
Groupe de travail ARC (Actuariat et Risques Contemporains), Sorbonne Université	*Paris, France, 2024*
ENS Ker-Lann	*Rennes, France, 2023*
UdeM & CIREQ Econometrics Seminar	*Montréal, Canada, 2023*
SINCLAIR (Saclay INdustrial Collaborative Laboratory for Artificial Intelligence Research)	*Paris, 2023*
Bayes Business School, Actuarial Seminar, City, University of London	*London, UK, 2023*
University of Waterloo, Actuarial and Statistical Seminar	*Waterloo, Canada, 2023*
Séminaire StatQAM	*UQAM, Montréal, Canada, 2023*
ASTIN Reading Group	*Online, 2023*
Séminaire Bachelier	*IHP, Paris, France, 2023*
University of Illinois	*Urbana-Champaign, IL, US, 2022*
Centre interdisciplinaire en modélisation mathématique (CIMMUL)	*Laval, Québec, 2022*
Laws, Institutions and Economics	*Nanterre, Paris, France, 2022*
Intel – Institute of Electrical and Electronics Engineers (IEEE)	*Bengaluru ಬೆಂಗಳೂರು, India, 2021*
Université de Sherbrooke	*Sherbrooke, Canada, 2021*
Institut Louis Bachelier	*Paris, France, 2021*
HEC Montréal, IRE - CREE Seminar	*Montréal, Canada, 2021*
Science Po (TransNum)	*Paris, France, 2020*
University of Connecticut, Actuarial Seminar	*Storrs, CT, US, 2020*
University of New South Wales (UNSW)	*Sydney, Australia, 2020*
Aix-Marseille School of Economics (AMSE)	*Marseille, France, 2020*
European Network for Business and Industrial Statistics (ENBIS)	*Palaiseau, France, 2020*
Paris Machine Learning Group	*Paris, France, 2020*
CMAP, École Polytechnique	*Palaiseau, France, 2020*
AICS	*Toronto, Canada, 2020*
Chaire Pari (Programme sur l'Appréhension des Risques et des Incertitudes)	*Paris, France, 2019*
ESSEC Risk Seminar	*Paris, France, 2019*
University of California, Actuarial & Statistical Seminar	*Santa Barbara, CA, US, 2019*
University of Wisconsin, Risk & Insurance Seminar	*Madison, WI, US, 2019*
University of Waterloo, Actuarial Seminar	*Waterloo, Canada, 2019*
UQAM, LATECE, Computer Science Seminar	*Montréal, Canada, 2019*
Université Laval, Quantact Actuarial Seminar	*Québec, Canada, 2019*
UQAM, Economics Seminar	*Montréal, Canada, 2018*
Telecom ParisTech	*Paris, France, 2018*
Università degli Studi dell'Insubria, Economics Seminar	*Varese, Italia, 2018*
ESSEC Risk Seminar	*Paris, France, 2018*
Université Laval, Economics Seminar	*Québec, Canada, 2018*

University of Michigan, Mathematics Seminar	*Ann Arbor, US, 2017*
Université de Caen, Economics Seminar	*Caen, France, 2017*
Université Paris Diderot, Statistics Seminar	*Paris, France, 2016*
Université Catholique de Louvain	*Louvain, Belgium, 2015*
GERAD, Université de Montréal	*Montréal, Canada, 2014*
Université Laval, Computational Science Seminar	*Quebec, Canada, 2014*
Centro de Investigación en Matemáticas	*Guanajuato, Mexico, 2014*
Universiteit van Amsterdam	*Amsterdam, Nederland, 2013*
HEC Lausanne, Actuarial Seminar	*Lausanne, Switzerland, 2013*
GeoTop, UQAM	*Montréal, Canada, 2012*
Université Laval, Statistical Seminar	*Québec, Canada, 2011*
Université Laval, Business School Seminar	*Québec, Canada, 2011*
Université Laval, Actuarial Seminar	*Québec, Canada, 2011*
HEC Montréal	*Montréal, Canada, 2010*
McGill University, Statistical Seminar	*Montréal, Canada, 2010*
Université de Rennes, Economics Seminar	*Rennes, France, 2010*
ESSEC Risk Seminar	*Paris, France, 2009*
Université de Montpellier	*Montpellier, France, 2009*
Université de Brest	*Brest, France, 2009*
Université de Rennes	*Rennes, France, 2008*
Université de Nantes	*Nantes, France, 2008*
Université Pierrre & Marie Currie	*Paris, France, 2008*
Universiteit van Amsterdam	*Amsterdam, Nederland, 2008*
Université de Toulouse 1	*Toulouse, France, 2007*
Imperial College	*London, UK, 2007*
PSE ENS Cachan	*Paris, France, 2007*
Université de Grenoble	*Grenoble France, 2007*
Université Paris Nanterre	*Nanterre, France, 2007*
Université de Compiègne	*Compiègne, France, 2007*
Hong Kong University 香港大學	*Hong Kong* 香港*, China* 中国*, 2007*
Universidad de Valparaíso	*Valparaíso, Chile, 2006*
ENSAI	*Rennes, France, 2006*
PSE Paris Sorbonne	*Paris, France, 2006*
Katholieke Universiteit Leuven	*Leuven, Belgium, 2006*
Institut de Mathématiques Appliqués	*Angers, France, 2006*

Selected talks and presentations at practitioners & student seminars

AXA Direct Assurance Meetings — Paris, France
Lorenz curves and calibration (keynote speaker) — *2025*

AXA Pricing Family Meetings — Paris, France
Discrimination and fairness in ratemaking (keynote speaker) — *2025*

SCOR monthly webinar — Paris, France (online)
Econometrics or Machine Learning (keynote speaker) — *2025*

Institut des Actuaires Annual Meeting — Paris, France
Causal modeling for actuaries — *2025*

R&D Workshop, SCR (Société Centrale de Réassurance) — Morocco, ٱلْمَغْرِب
Fairness and Insurance (keynote speaker) — *2025*

Association des Masters d'Actuariat — France
AI, biases and fairness, in insurance and actuarial science (keynote speaker) — *2025*

Institut des Actuaires — Paris, France (online)
Fairness and discrimination (keynote) — *2025*

Institut Luxembourgeois des Actuaires (ILAC) Annual Meeting — Luxembourg
Discrimination, fairness and interpretability (keynote speaker) — *2025*

Milliman R&D Seminar — France
A Spectrum of Fair Premiums, an Introduction (keynote) — *2025*

Financial Conduct Authority (FCA) — London, UK
Demystify fairness and discrimination in insurance, and avoid some pitfalls (keynote) — *2024*

Workshop on Trustworthy AI — Montréal, Canada
Insurance, discrimination and fairness — *2024*

Institut des Actuaires Annual Meeting — Paris, France
Heat waves and subsidence — *2024*

Actuarial Contact Program, ACP – KUL — Leuven, Belgium
From contemplative to predictive modeling in actuarial science and risk management — *2024*

Groupe de Travail 'Mutualisation des risques', France Stratégie — Paris, France
Member of group, various participations and presentations — *2024*

SCOR monthly webinar — Paris, France (online)
Scope and limits of artificial intelligence — *2024*

TD General Insurance Pricing Seminar — Montréal, Canada
Fairness and Ethics in Actuarial Pricing — *2024*

Akur8 Technical Seminar — Paris, France (online)
Ethics in Actuarial Pricing, and `equipy` — *2024*

Chaire Thélem / ILB — Orléans, France
Fairness and Ethics in Actuarial Pricing — *2024*

Data Talk Generali — Paris, France
Fairness and Ethics in Actuarial Pricing — *2024*

Colloque Actuariat Francophone — Paris, France
La mutualisation et l'inclusion à l'épreuve de la segmentation (invited speaker) — *2023*

TD Insurance Data Analytics Seminar — Montréal, Canada
Fairness and Ethics in Actuarial Pricing — *2023*

Intact Seminar Montréal, Canada
Causal Models for Discrimination in Insurance *2023*

Akur8 Pricing Seminar Paris, France
Fairness and Ethics in Actuarial Pricing *2023*

Conference Data Science Institute Montréal, Canada
Les enjeux des risques climatiques en assurance de dommages *2023*

Table ronde sur la pratique actuarielle, AG2R Paris, France
Perspective de la pratique actuarielle *2023*

3e Colloque International de l'Actuariat Francophone Paris, France
La mutualisation et l'inclusion à l'épreuve de la segmentation *2023*

Journée d'étude AIvidence Paris, France
Machine Learning with Fairness Contraints *2023*

Data Science Webinar, Institut du Risk Management Paris, France
Machine Learning with Fairness Contraints *2023*

Service Juridique France Assureurs Paris, France
Insurance & 'high-risk' AI systems - EU AI Act *2023*

Comité Corporel de France Assureurs Paris, France
To Sue or not to Sue *2023*

Colloque SCOR-Institut des Actuaires Paris, France
Assurance collaborative, théorie des graphes et actuariat *2022*

Beneva (La Capitale & SSQ Assurance) Québec, Canada
Competitions in insurance markets *2022*

Optimind Webinar Paris, France
La non-discrimination dans l'usage des données et les modèles actuariels *2022*

Cov&Data, Covea (MAAF, MMA & GMF) Paris, France
Interpretability of predictive models *2022*

100% Data Science, Institut des Actuaires Annual Meeting Paris, France
Are you a probability? *2022*

DataDay MAIF Niort, France
Data and climate change *2022*

Casualty Actuarial and Statistical Task Force (CASTF), NAIC Washington, DC, USA
An introduction to Bayesian models *2022*

Journées actuarielles - Actuarial Days - Groupama Paris, France
Flood and subsidence *2022*

Chaire DIALog (digital insurance and long term risk) Paris, France
Insurance, fairness and discrimination *2022*

Institut des Actuaires & Institut Louis Bachelier Paris, France
Vision bayésienne de l'apprentissage *2022*

ASTIN – International Actuarial Association Ottawa, Canada
Insurance: discrimination and fairness *2022*

Journée de l'actuariat IARD (Institut des Actuaires) Paris, France
Machine Learning : de la promesse à la réalité (table ronde) *2022*

IVADO (Communauté de pratique) Montréal, Canada
Insurance: biases, discrimination & fairness *2022*

COV&Data Conference: IA de confiance Paris, France
Insurance: biases, discrimination & fairness *2022*

AXA Actuarial Conference # 62 Paris, France
Catastrophic Climate risks and Insurance *2022*

100% Data Science, Institut des Actuaires Annual Meeting Paris, France
Modeling subsidence risk in France *2021*

Institut Louis Bachelier & Institut des Actuaires Paris, France
Assurance collaborative : Théorie des graphes et Actuariat *2021*

TD Insurance Montréal, Canada
Insurance pricing in competitive markets *2020*

Autorité de contrôle prudentiel et de résolution (ACPR) Paris, France
Insurance pricing in competitive markets *2019*

SCOR, Rencontres Mutualistes Beaune, France
Insurance pricing in competitive markets *2018*

AON Benfield, Journées du marché Paris, France
Insurance and climate *2018*

Data science conference, Generali Paris, France
Machine learning in insurance *2016*

Institut des Actuaires, Big Data Semimar Paris, France
Machine learning in insurance *2015*

Society of Actuaries, Predictive Modeling Seminar Chicago, IL, US
From Generalized Linear Models to Trees *2013*

Desjardins Reserving Seminar Montréal, Canada
One-year uncertainty *2011*

Milliman Reserving Seminar Paris, France
One-year uncertainty *2010*

Reviewer activities

Peer reviewed journals

Stochastic Environmental Research and Risk Assessment; Theory and Decision; Insurance: Mathematics & Economics; Journal of Banking & Finance; The Canadian Journal of Statistics; Journal of Computational and Graphical Statistics; Journal of Multivariate Analysis; Communications in Statistics: Theory and Methods; Quantitative Finance; Journal of the American Statistical Association; TEST; Asia-Pacific Journal of Financial Studies; Statistics and Decision; Kybernetika; European Journal of Finance; Mathematics and Financial Economics; Statistica Sinica; Extremes; Physics and Chemistry of the Earth; Computational Statistics; Geneva Papers on Risk and Insurance; Bernoulli; Water Resources; Statistics & Probability Letters; Mathematical Finance; Journal of Risk; Journal of Hydrology; Scandinavian Actuarial Journal; Advances in Statistical Analysis; European Actuarial Journal; Metrika; Journal of Statistical Planning and Inference; Annals of Applied Statistics; Constructive Approximation; Econometric Reviews; Annals of Economics and Statistics; Annals of Actuarial Science; Journal of the Royal Statistical Society (JRSS) – Series B; Mathematics of Social Sciences; Economic Theory; ASTIN Bulletin (Journal of the International Actuarial Association); Journal of Statistical Software; Journal of Population Economics; Risks; Journal of Zhejiang University - Science A; Journal of Time Series Analysis; European Journal of Operation Research;

Econometrica; Dependence Modeling; Journal of Economic Behavior & Organization; Annals of Actuarial Science; Entropy; Sustainability; Risk Analysis; Journal of Statistical Computation and Simulation, North American Actuarial Journal; Global Food Security; IEEE Transactions on Information Theory; Remote Sensing; Stochastic Processes & Applications; Risk and Decision Analysis ; Journal of Mathematical Economics; Journal of Risk and Insurance; PLOS One; Journal of Theoretical Biology; Bulletin de l'Association Mathématique du Québec; International Journal of Mathematics in Operational Research; Artificial Intelligence Review; Journal of Economic Inequality; Patterns; Systems and Control Letters; Annals of Operations Research; Natural Hazards and Earth System Sciences; EGUsphere; Information Sciences; International Journal of Information Management; Data Insight; Big Data & Society; Measurement (Journal of the International Measurement Confederation); ACM Computing Surveys; Finance Research Letters; Neurocomputing; Management Science; Journal of Economic Theory; Philosophy & Public Affairs; Operational Research; Computers in Human Behavior: Artificial Humans; Compte Rendus de l'Académie des Sciences; Transactions in Machine Learning Resarch (TMLR); ; Journal of the Royal Statistical Society (JRSS) – Series C; Expert Systems With Applications; European Economic Review; Agua y Territorio (Water and Landscape); Research in Transportation Economics; Artificial Intelligence in Medicine; Digital Society; Technology in Society; Risk and Decision Analysis; Sustainable Development; Review of Income and Wealth; Journal of Machine Learning Resarch (JMLR); Artificial Intelligence In Medicine;

Conferences / Program Committee (PC) member / Reviewer

ECML'24,'25; AIStats'24; IJCNN'25; ICML'25; NeurIPS'25; AAAI'26; ICLR'26

Books Project Reviewer

MIT Press, Springer Verlag, CRC Press, SAGE, Economica, Cambridge University Press

Tenure Reviewer

UC Santa Barbara, HEC Lausanne, Heriot-Watt University, University of Madison Wisconsin, University of Toronto, Simon Fraser University

Grants Reviewer

ANR (Agence Nationale pour la Recherche, France), AXA Research Fund, FNR Luxembourg CORE program (Luxembourg), FRQNT (Fonds de Recherche du Québec - Nature & Technologie, Canada), ESF (European Science Foundation), F.R.S.-FNRS (Fonds de la Recherche Scientifique, Belgique), MICTACS (Mathematics of Information Technology and Complex systems, Canada), NSA (National Security Agency - Mathematical Sciences Grant Program - U.S.A.), NSERC (Natural Sciences and Engineering Research Council, Canada), IVADO (Institut de valorisation des données, Canada), ANRT (Agence Nationale Recherche & Technologie, France), Fondation SCOR, ISF - הקרן הלאומית למדע (Israel), NWO (Nederlandse organisatie voor wetenschappelijk onderzoek), RGC (Hong Kong Research Grants Council - 研究资助局), OBVIA (Observatoire international sur les impacts sociétaux de l'IA et du numérique).

Member of the jury (B1/B2/B3-03E) 2019-2023 — *FQRNT (Quebec) Canada*
Mathematics and Statistics Evaluation Group (EG 1508) 2022-2025 — *NSERC (Canada)*

Selected research visits and invitations (> 1 week)

ESSEC Singapore — Singapore
visiting Pierre Alquier — *2026*

Tsinghua University, 清华大学 Haidian, Beijing 海淀区, China 中华人民共和国
visiting Runhuan Feng 冯润桓 *2026*

ENSAE Institut Polytechnique Saclay, France
visiting Caroline Hillairet *2024*

University of California Santa Barbara, CA, US
visiting Mike Ludkovski *2019*

Universitat de Barcelona Barcelona, España
visiting Montserrat Guillen *2018*

Università degli Studi dell'Insubria Varese, Italia
visiting Raffaello Seri *2018*

Harvard University Cambridge, US
visiting Christine Choirat & Pierre Jacob *2017*

Universitat de Barcelona Barcelona, España
visiting Montserrat Guillen *2016*

Centro de Investigación en Matemáticas Guanajuato, Mexico
visiting Victor Rivero *2014*

Universidade Federal de Minas Gerais Belo Horizonte, Brasil
visiting Renato Assunção *2013*

Julien Trufin *Université Libre de Bruxelles, Belgique 2024, 2025*
Raphaël Suire *Université de Nantes, France 2024*
Fei Huang *UNSW, Sydney, Australia, 2024*
Laurence Barry *Chaire PARI, France, 2024*
Stéphane Loisel *CNAM Paris, France, 2024*
Mario Ghossoub *Waterloo University, Canada, 2022, 2023*
Ewen Gallic *Université Aix-Marseille, France, 2023-2025*
Jean-Michel Loubes *Université Paul Sabatier, Toulouse, France, 2022*
Andreaa Enache (Covid-19) *Stockholm School of Economics, Sweden, 2020-2021*

Bachelor (BSc) students (since 2025)

Allison Lara Nieva *Universidad Nacional Autónoma de México, 2025*
Iryna Voitsitska, Ірина Войціцька *Український Католицький Університет, Ukraine Україна, 2025*
Mahery Andriamadison *Sorbonne Université, Paris, France, 2025*

Master (MSc) students (since 2020)

Lucas Offroy *INSA Rennes & Université de Brest, France, 2025*
Raphaël Dalbarade *ENSAE Paris, France, 2025*
Noé Bosc-Haddad *Ecole Centrale, Paris, France, 2024*
Aña María Patrón Piñerez *Universidad de los Andes, Colombia, 2024*
Julien Siharath *Université de Rennes, France, 2024*
Cassandra Mussard *ENSEEIHT & INSA Toulouse-ModIA, France, 2024*
Florent Crouzet *École Polytechnique, France, 2024*
Suzie Grondin *ENSAE, Paris, France, 2023*
Gaspard Ichas *ENSAI, Rennes, France, 2023*
Nathan Herzhaft *École Polytechnique, France, 2023*

Kim Anh Lê — *Ludwig-Maximilians-Universität München, Deutschland, 2023*
Olivier Côté — *(co-supervision) Université Laval, Québec, Canada, 2023*
Martin de Closets — *École Polytechnique, France, 2022*
Franklin Feukam Kouhoue (Prix des Sciences du Risque Optimind) — *ENSAE, Paris, France, 2022*
Rawanda Matar — *UQAM, Canada, 2021*
Menna Hassan — *(co-supervision) American University الجامعة الأمريكية بالقاهرة, Cairo, Egypt, 2021*
Lariosse Kouakou — *Université de Brest, France, 2020*
Elie Odin — *ENS (École Normale Supérieure) Ker Lann, France, 2020*

PhD Students supervision (3 ongoing, 5 completed)

- **Agathe Fernandes Machado**
  Fairness and causal models, co-supervised with E. Gallic (Aix-Marseille University) — *2023-today*
- **Olivier Côté**
  Predictive Models, Interpretability and Explainability, co-supervised with M.P. Côté (Laval) — *2023-today*
- **Hongda Hu**
  Bandits and risks, co-supervised with M. Ghossoub & A. Schied (Waterloo) — *2020-today*

Samuel Stocksieker — then Aix-Marseille University
Unbalanced Data, co-supervised with D. Pommeret — *2020-2024*

Philipp Ratz — then FEDRO research fellow
Constraints in Fair Estimation and Games — *2021-2024*

Enora Belz — then Excelcio
Etude de données agrégées et mesures d'inégalités — *2016-2021*

Antoine Ly — then CDSO at SCOR
Algorithmes de machine learning en assurance, co-supervised with R. Élie — *2015-2019*

Amadou Barry — then McGill
Régression expectile pour données longitudinales, co-supervised with K. Oualkacha — *2013-2019*

PhD Students invitations

Kathleen Miao (University of Toronto) Charles Condevaux (Université de Nîmes, France) Gilles Hacheme (AMSE, France) Loann Desboulets (AMSE, France) Bertille Picard (AMSE, France), Samira Ait Mekideche (University of Béjaïa, Algeria), Fallou Niakh (ENSAE-Polytechnique, France)

Post-doctoral supervision (2 ongoing, 5 completed)

- **Arsene-Brice Zotsa Ngoufack**
  Generative models with diffusion, co-supervised with H. Guérin (UQAM) — *2024-2025*
- **Marouane Il-Idrissi**
  Interpretability and fairness, co-supervised with M.P. Côté (Laval University) — *2024-2026*
  ⋆ CANSSI Distinguished Postdoctoral Fellowship

François Hu — then Milliman R&D,
Fairness, co-supervised with M. Moralès (UdeM) — *2022-2024*

Félix Foutel Rodier — then Oxford University
Mathematical models for pandemics, co-supervised with H. Guérin — *2021-2022*

Amirouche Benchallal then Natural Resources Canada
Extracting information from satellite pictures, with Y. Bouroubi *2021-2022*

Ewen Gallic then Aix-Marseille Univ. (AMSE)
Extracting information from collaborative genealogical data *2017-2018*

Arnaud Goussebaïle then ETH Zürich
Insurance and prevention of natural catastrophes *2016-2017*

Jury (Habilitation à Diriger des Recherches, PhD, MSc), External Member

HDR (rapporteur, 6): Myriam Tami (Université Paris-Saclay); Vincent Brault (Université de Grenoble); Pierre Thérond (Université de Lyon); Emilie Devijver (CNRS & Université de Grenoble); Christophe Dutang (Université Paris Dauphine); Nabil Kazi-Tani (Université de Lyon)

PhD (38): Gayane Taturyan (Université de Toulouse); Audrey Poinsot (INRIA & Université Paris Saclay); Marc Yeterian (Université Paris Dauphine-PSL); Wistan Marchadour (Université de Brest); Marouane Il-Idrissi (Université de Toulouse); Francis Duval (UQAM, Montréal); Eric Vansteenberghe (Paris School of Economics); Dafnis Krasniqi (Université Paris-Sorbonne); Bertille Picard (Université d'Aix-Marseille); Lucas de Lara (Université de Toulouse); Mohamed Ouhourane (UQAM, Montréal): Pierre Chatelain (Université de Lyon); Antoine Heranval (Sorbonne Université); Geoffrey Ecoto (Sorbonne Université); Guillaume Boglioni Beaulieu (UNSW, Sydney); Mohamed Ouhourane (UQAM, Montréal); François Hu (Institut Polytechnique, Paris); Sander Devriendt (KU Leuven); Meryem Yankol Schalck (Université Paris Nanterre); Debora Zaparova (Université de Strasbourg); Loann Desboulets (Aix-Marseille School of Economics); Lenin Arango Castillo (Queen's University); Pierrick Piette (Université de Lyon 1); Oscar Alberto Quijano Xacur (Concordia University, Montréal); Yang Jiao (Telecom SudParis); Edouard Debonneuil (Université de Lyon 1); Alexandre Godzinski (EHESS, PSE, Paris); Fattouma Souissi (Université de Montpellier); Arnaud Goussebaïle (École Polytechnique); Leo Guelman (Universitat de Barcelona); Przemyslaw Sloma (Université Paris VI); Mathieu Pigeon (UC Louvain); Julien Tomas (Uv Amsterdam); Aymric Kamega (Université Lyon I); Tarek Zari (Université Paris VI); Meriem Maatig (Université Paris II Assas); Noureddine Ben Lagha (Université Paris II Assas)

MSc: Mélanie Raymond, Jordi Rolls Teikeu Jatsa, Francis Duval, Roxane Turcotte, Olivier Binette, Julie Bélanger, Alexandre Roy-Gaumond (UQAM), Paul Mathivon (Polytechnique)

Jury (Prices)

Journal of Risk and Insurance
Jury for Robert I. Mehr Award *2023*

Annals of Economics and Statistics
Jury for the best young researcher paper *2021,2022*

Scor Actuarial Price
Jury for MSc and PhD Best Thesis Prices *since 2023*

Recruiting committees (external member)

CNRS IA-SHS chaire professeur junior, CPJ *2022*
Aix-Marseille School of Economics, PR *2022*

Aix-Marseille School of Economics, MCF 2018
Université Lyon 1-ISFA, MCF 2016

Publications

over 3950 citations (Google Scholar icon, November 2025), 50 published papers in peer reviewed journals, 17 published papers in peer reviewed international conferences, 7 books, 56 papers in French (including dissemination papers), 20 chapters in textbooks, 3 practitioners' report and 35 working papers (most available on ArXiv).

Published papers in peer reviewed journals (50)

1. H.Hu*, A.Charpentier, M.Ghossoub & A.Schied (2025). The multi-armed bandit problem under the mean-variance setting. *European Journal of Operational Research*, doi:10.1016/j.ejor.2025.03.011
2. F.Foutel-Rodier+, A.Charpentier & H.Guérin (2025). Optimal Vaccination Policy to Prevent Endemicity: a Stochastic Model. *Journal of Mathematical Biology*, doi:10.1007/s00285-024-02171-z
3. X.Vamparys*& A.Charpentier (2024). Artificial Intelligence and Personalization of Insurance: Failure or Delayed Ignition? *Big Data & Society*, doi:10.1177/20539517241291817
4. O.Côté*, M.P.Côté & A.Charpentier (2024). A fair price to pay: Exploiting causal graphs for fairness in insurance. *Journal of Risk & Insurance*, doi:10.1111/jori.12503
5. K.Aas, A.Charpentier, F.Huang & R.Richman (2024). Insurance analytics: prediction, explainability and fairness. *Annals of Actuarial Science*, doi:10.1017/S1748499524000289.
6. A.Charpentier (2024). The Role of Government vs. Private Sector Provision of Insurance. *Journal of Risk & Insurance*. doi:10.1111/jori.12497
7. S.Stocksieker*, D.Pommeret & A.Charpentier (2024). Generalized Oversampling for Learning from Imbalanced datasets and Associated Theory: Application in Regression. *Transactions on Machine Learning Research*, issn:2835-8856
8. M.Moriah*, F.Vermet & A.Charpentier (2024). Measuring and Mitigating Biases in Motor Insurance Pricing. *European Actuarial Journal*, doi:10.1007/s13385-024-00390-8
9. L.Barry & A.Charpentier (2023). Melting Contestation: Insurance Fairness and Machine Learning, *Ethics and Information Technology* doi:10.1007/s10676-023-09720-y
10. A.Barry*, K.Oualkacha & A.Charpentier (2023). Alternative fixed-effects panel model using weighted asymmetric least squares regression, *Statistical Methods & Applications* doi:10.1007/s10260-023-00692-3
11. L.Barry & A.Charpentier (2022) L'équité de l'apprentissage machine en assurance. *Statistiques & Société*,
12. A.Charpentier & E.Flachaire (2022). Oaxaca-Blinder decomposition of changes in means and inequality: A simultaneous approach, *Economics Bulletin*,
13. R.Bigot, A.Cayol & A.Charpentier (2022) Risque de pandémie, pertes d'exploitation et incertitudes des garanties assurantielles. *Revue Responsabilité civile et Assurances*

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*: graduate student; +: postdoctoral fellow

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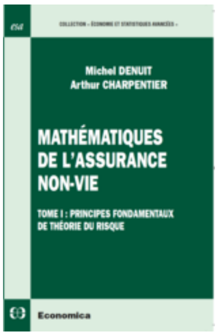

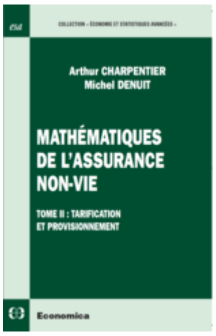

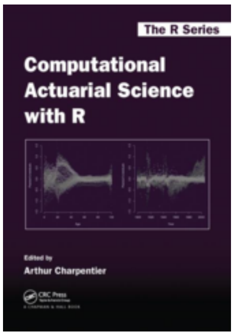

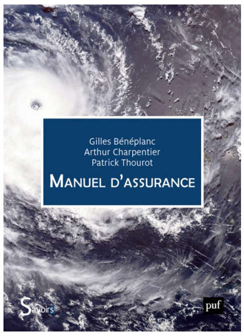

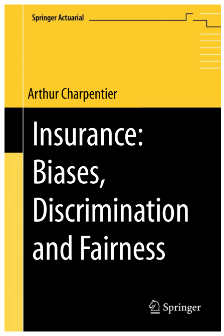

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153. A.Charpentier, O.Côté*, M.P.Côté & A.Fernandes Machado (2024) Feedback on FSRA's "Proposed Automobile Insurance Rating and Underwriting Supervision Guidance". Financial Services Regulatory Authority of Ontario

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Working Paper & in Progress (35)

154. A.Charpentier, C.Denis, R.Élie, M.Hebiri & F.Hu (2025). Fair regression under demographic parity quantile constraint. *forthcoming*

155. A.Fernandes Machado*, E.Gallic & A.Charpentier (2025). Enhancing Binary Probabilistic Classifier Evaluation through Scoring Rule Decomposition and Attribution. *forthcoming*

156. O.Côté* , M.P.Côté & A.Charpentier, (2025). Fairness in insurance pricing *forthcoming*

157. A.Charpentier, O.Côté* & M.P.Côté (2025). A Three-Pillar Governance Framework for Fair Insurance Pricing *submitted*

158. O.Côté*, M.Il-Idrissi, A.Charpentier, & M.P.Côté (2025). Profiling Actuarial Discrimination via Causal Shapley Decomposition. *forthcoming*

159. A.Charpentier, M.Il-Idrissi+ & M.P.Côté (2025). From Shapley to Social Welfare: Integrating Inequality Aversion into Fair Insurance Ratemaking. *forthcoming*

160. A.Charpentier, Q.S.Guo & M.Ludkovski (2025) Patterns and Anomalies of Loss Development in P&C Insurance Market. doi:10.48550/arXiv.2510.27204

161. A.Charpentier & P.Ratz (2025). Linear Risk Sharing on Networks. doi:10.48550/arXiv.2509.21411

162. A.Charpentier, O.Côté* & M.P.Côté (2025). Un cadre de gouvernance à trois piliers pour une tarification équitable de l'assurance *Chaire PARI WP #37*

163. A.Charpentier (2025). Perceived Fairness in Networks. doi:10.48550/arXiv.2510.12028

164. A.Fernandes Machado*, I.Voitsitska*, E.Gallic & A.Charpentier (2025). CaMeLOT, Causal Mediation Leveraging (sequential) Optimal Transport. *submitted*

165. A.Charpentier, O.Côté* & M.P.Côté (2025). Un cadre de gouvernance à trois piliers pour un tarification équitable de l'assurance *Chaire Pari Working Paper 37*

166. M.Il-Idrissi+, A.Fernandes Machado*, E.Gallic & A.Charpentier (2025). Unveil Sources of Uncertainty: Feature Contribution to Conformal Prediction Intervals. doi:10.48550/arXiv.22505.13118

167. F. Niakh*, A. Charpentier, C. Hillairet & P. Ratz (2025). Disaster Risk Financing through Taxation: A Framework for Regional Participation in Collective Risk-Sharing. doi:10.48550/arXiv.2506.18895

168. S.Grondin*, P.Ratz*& A.Charpentier (2025). Beyond Human Intervention: Algorithmic Collusion through Multi-Agent Learning Strategies. doi:10.48550/arXiv.2501.16935

169. O.Côté*, M.P.Côté & A.Charpentier (2024). Selection bias in insurance: why portfolio-specific fairness fails to extend market-wide. doi:10.2139/ssrn.5018749

170. A.Fernandes-Machado*, A.Charpentier, E.Flachaire, E.Gallic & F.Hu (2024). Probabilistic Scores of Classifiers, Calibration is not Enough arXiv:2408.03421

171. A.Fernandes-Machado[⋆], F.Hu[+], P.Ratz[⋆], E.Gallic & A.Charpentier (2024). Geospatial Disparities: A Case Study on Real Estate Prices in Paris. arXiv:2401.16197

172. A.Fernandes Machado[⋆], A.Charpentier, E.Flachaire, E.Gallic & F.Hu[+] (2024). From Uncertainty to Precision: Enhancing Binary Classifier Performance through Calibration arXiv:2402.07790

173. F.Hu[+], P. Ratz[⋆] A.Fernandes Machado[⋆], S.Grondin[⋆] & A.Charpentier (2024). `EquiPy`: Sequential Fairness using Optimal Transport in Python. doi:10.48550/arXiv.2503.09866

174. F.Hu[+], P.Ratz[⋆] & A.Charpentier (2023). Fairness Explainability using Optimal Transport with Applications in Image Classification arXiv:2308.11090

175. X.Vamparys[⋆] & A.Charpentier (2023). Intelligence artificielle et individualisation des garanties en assurance: échec ou retard à l'allumage? *Chaire PARI WP #32*

176. F.Hu[+], P.Ratz[⋆] & A.Charpentier (2023). Parametric Fairness with Statistical Guarantees. arXiv:2310.20508

177. M.Hassan[⋆], A.Charpentier & N. Sakr (2022). Government Intervention in Catastrophe Insurance Markets: A Reinforcement Learning Approach. arXiv:2207.01010

178. L.Barry & A.Charpentier (2022). L'équité de l'apprentissage machine en assurance. *Chaire PARI WP #26*

179. V.Grari[⋆], A.Charpentier, S. Lamprier & M. Detyniecki (2021). A fair pricing model via adversarial learning. arXiv:2202.12008

180. A.Charpentier, L.Kouakou[⋆], M.Löwe, P.Ratz[⋆] & F.Vermet (2021). Collaborative Insurance Sustainability and Network Structure. arXiv:2103.03635

181. O. Cabrignac, A.Charpentier & E. Gallic[+] (2020) Modeling Joint Lives within Families. arXiv:2006.08446

182. A.Charpentier, A.Galichon & L.Vernet[⋆] (2019) Optimal transport on large networks a practitioner guide. arXiv:1907.02320

183. E.Belz[⋆] & A.Charpentier (2019) Données Agrégées et Variables Compositionnelles : Note Méthodologique. hal:2097031, poster

184. A.Charpentier & E.Flachaire (2019) Extended Scale-Free Networks arXiv:1905.10267

185. A.Charpentier (2018) An introduction to multivariate and dynamic risk measures hal:01831481,

186. M.Boudreault & A.Charpentier (2011) Multivariate integer-valued autoregressive models applied to earthquake counts arXiv:1112.0929

187. A.Charpentier (2010) Reinsurance, ruin and solvency issues: some pitfalls hal:00463381,

188. A.Charpentier & D.Causeur (2010) Large-scale significance testing of the full Moon effect on deliveries hal:00482743,

Teaching

(most material used for teaching is available on under BY-NC 4.0 license)

Selected courses

Five Lectures on Fairness and Discrimination in Insurance — Graduate Lecture VI
Kyoto University 京都大学, Japan 日本 — *2025*

Statistical learning — STT3030
Université du Québec à Montréal, Canada — *2024*

Fairness and discrimination in predictive modeling — MAT998P
Université du Québec à Montréal, Canada — *2024*

Insurance, biases, discrimination and fairness
ENSAE-Institut Polytechnique, Saclay, France — *2024*

Introduction to data science and artificial intelligence — INF7100
Université du Québec à Montréal, Canada — *2020,2024*

Data Science for Actuaries — ACT6100
Université du Québec à Montréal, Canada — *2020*

Applied Linear Models — STT5100
Université du Québec à Montréal, Canada — *2018,2019,2020,2021,2022,2023,2025*

Statistics — STT1000 & MAT4681
Université du Québec à Montréal, Canada — *2022*

Regression — MAT7381
Université du Québec à Montréal, Canada — *2020*

Non-life insurance mathematics
ENSAE, Paris, France — *2015, 2016, 2017*

Networks and flows
Université de Rennes 1, France — *2017*

Welfare and inequalities
Université de Rennes 1, France — *2016,2017, 2018*

Time Series — MAT8181
Université du Québec à Montréal, Canada — *2014*

Copulas and Extreme Values — MAT8595
Université du Québec à Montréal, Canada — *2014*

YouTube channel
Courses ~ 75,000 views — *2020-2021*

Summer schools

Insurance, biases, discrimination and fairness
Szkoła Nauk Aktuarialnych, Warsaw, Polska — *2024*

Econometrics and Machine Learning
Società Italiana di Econometria (SIdE), Italia — *2019*

Insurance Data Science: Use and Value of Unusual Data
Summer School of the Swiss Association of Actuaries, Lausanne, Switzerland — *2019*

Econometrics and Machine Learning
Università degli studi dell'Insubria, Varese, Italia — *2018*

Econometrics and Machine Learning
Universitat de Barcelona, España — *2018*

Other Institutions

École Polytechnique	*France, 2008-2010*
Đại học Kinh tế Thành phố, Hồ Chí Minh	*Việt Nam, 2008*
Institut de Statistique de l'Université de Paris (ISUP)	*France, 2008*
Institut de Mathématiques Appliqués, Angers	*France, 2007*
INSEA المعهد الوطني للإحصاء والاقتصادالتطبيقي, Rabbat	*Morocco ٱلْمَغْرِب, 2006*
Université Saint-Joseph, Beyrut	*Lebanon لبنان, 2006*
ENSEA, Abidjan	*Ivory Coast, 2003*

Professional training

Machine Learning for Actuaries	Bermuda
Bermuda Monetary Authority	*2025*
Data Science for Actuaries	Paris, France
Institut des Actuaires	*2015-2018*
Data Science & Machine Learning for Actuaries	Istanbul, Singapore & Paris
AXA Group	*2015*
Machine Learning for Insurance	Niort, France
MAIF Insurance	*2014*
Natural Catastrophes & Cat Bonds	Paris, France
AXA Group	*2007*
R for Actuarial Science	Paris, France
AXA & Caritat (professional training)	*2006-2007*

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