

# 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

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### Work Experience

**Kyoto University 京都大学 ▶** Kyoto 京都, Japan 日本  
2025-2026  
Visiting Professor, Mathematics Department

- Invited at Research Institute for Mathematical Sciences (数理解析研究所)

**Université du Québec à Montréal (UQAM) ▶** Montréal, Canada  
since 2018  
Full Professor, Mathematics Department

- 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  
since 2017  
Full Professor (Professeur des Universités), Faculty of Economics

- Member of CREM ▶ (UMR 6211 CNRS)  
Teaching duty : 192 hours per year
- Currently secondment (“détachement”) at UQAM

**Institut des Actuaire** Paris, France  
2015-2018  
Director, Data Science for Actuaries Program  
(with R.Élie and J.Jakubowicz)

- Continuing education for qualified actuaries on machine learning and data science

**Université de Rennes ▶** Rennes, France  
2014-2017  
Assistant Professor (Maître de Conférences), Faculty of Economics

- 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  
2011-2014  
Professor, Mathematics Department

- 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)

<b>Université de Montréal</b> Visiting Professor, Mathematics Department • Teaching STT2700, STT6705	Montréal, Canada 2010-2011
<b>École Polytechnique</b> ▶ Professeur Chargé de Cours, Economics Department • Teaching ECO431, ECO550, ECO556, ECO568	Palaiseau, France 2008-2010
<b>Université de Rennes</b> ▶ Assistant Professor - Maître de Conférences, Faculty of Economics • Co-director of the Econometrics & Statistics MSc Teaching duty : 192 hours per year • Teaching Econometrics, Mathematical Statistics, Insurance Modeling	Rennes, France 2007-2010
<b>École Nationale de la Statistique et d'Analyse de l'Information</b> ▶ ENSAI, Lecturer • Teaching Numerical techniques in finance, copulas and risk measures	Ker Lann, France 2006-2007
<b>École Nationale de la Statistique et de l'Administration Économique</b> ▶ ENSAE, Lecturer • Teaching Non-life Insurance, Reinsurance and Extreme Value • Institute of Actuaries correspondent, Jury for actuarial thesis	Malakoff, France 2002-2006
<b>French Federation of Insurers</b> ▶ France Assureurs (ex FFA, FFSA), Statistics department • Publications on Cat Bonds and Insurers Solvency	Paris, France 2001-2002
<b>AXA General Insurance Hong Kong Limited</b> 安盛保險有限公司 ▶ Pricing and Reserving Actuary	Hong Kong 香港, 中国 1999-2001
<b>Exane</b> ▶ Fixed Income Research Department	Paris, France 1998-1999

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## Education

<b>Université de Rennes</b> ▶ Habilitation à diriger des recherches • Contributions to dependence modeling <i>Reviewers</i> : N. El Karoui, P. Embrechts & M. Hoffmann <i>Jury</i> : K. Antonio, D. Florens, J. Garrido, O. L'Haridon & S. Loisel	Rennes, France 2016
<b>Katholieke Universiteit Leuven (KU Leuven)</b> ▶ Doctor in de Wetenschappen Wiskunde - PhD in Applied Mathematics • Dependence structures and limiting results, with applications in finance and insurance <i>Supervisors</i> : J. Beirlant & M. Denuit <i>Jury</i> : J. Dhaene, A.L. Fougères, I. Gijbels, C. Gouriéroux & W. Schoutens	Leuven, Belgium 2006
<b>École Nationale de la Statistique et de l'Administration Économique</b> ▶ ENSAE, MSc. in statistics & actuarial science	Malakoff, France 1999
<b>Université Paris Dauphine</b> ▶ DEA MASE, MSc. in mathematical economics & finance	Paris, France 1999

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## Affiliations & Fellowships

### Current

CRM (Centre de Recherche Mathématiques de Montréal), StatLab, CRI<sup>2</sup>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 Actuaire 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 Actuaire & 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 Frédéric 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

<b>Agence Nationale pour la Recherche</b>	500,000€
<i>AST&amp;Risk Approches spatio-temporelles pour la modélisation du risque (5%)</i>	2008-2012
<b>Institut Louis Bachelier</b>	24,000€
<i>Chaire AXA-ENSAE(100%)</i>	2010

## Duties

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### Journal, Books & Association Boards

<b>Canadian Statistical Sciences Institute (CANSSI) ▶</b>	Canada
<i>Member of the Board of Directors</i>	2022-2025
<b>Chapman &amp; Hall/CRC Series in Actuarial Science ▶</b>	
<i>Series Editor Board</i>	since 2024
<b>European Actuarial Journal ▶</b>	
<i>Co-Editor</i>	since 2025
<b>Journal of Risk and Insurance ▶</b>	
<i>Senior Editor</i>	2022–2025
<b>Risks ▶</b>	
<i>Member of the Editorial Board</i>	since 2019
<b>Astin Bulletin Editorial Board ▶</b>	
<i>Journal of the International Actuarial Association, member of the Editorial Board</i>	since 2018
<b>Economics Bulletin</b>	
<i>Member of the Editorial Board</i>	2021-2022
<b>European Actuarial Journal ▶</b>	
<i>Associate Editor</i>	2014-2022

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### Selected recent services


<b>Faculty of Science, UQAM</b>	Montréal, Canada
<i>Member of the Research Committee</i>	2018-2024
<b>MSc &amp; PhD Program in Mathematics, UQAM</b>	Montréal, Canada
<i>Member of the supervising committee</i>	2021-2025
<b>Bachelor Program in Actuarial Science, UQAM</b>	Montréal, Canada
<i>Member of the supervising committee</i>	2018-2021
<b>Conseil de Faculté, Université de Rennes</b>	Rennes, France
<i>Member of the faculty board</i>	2016-2018

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### Selected evaluation committees

<b>NSERC-CRSNG - Discovery Horizons (DH)</b>	Ottawa, Canada
<i>Program Fit Advisor (PFA)</i>	2026-2029
<b>NSERC-CRSNG - Discovery Grants (DG)</b>	Ottawa, Canada
<i>Member of the Mathematics and Statistics - Evaluation Group (EG) 1508</i>	2022-2025
<b>FRQNT (Québec Research Fund) Grants</b>	Québec, Canada
<i>Member of the jury (B1/B2/B3-03E), Master, PhD, Postdocs</i>	2019-2023
<b>HCÉRES</b>	Paris, France
<i>Haut Conseil de l'évaluation de la recherche et de l'enseignement supérieur</i>	
<i>Evalution committee president</i>	2020
















## Data & Code

<b>Insurance Pricing Game</b> <a href="http://pricing-game.com/">http://pricing-game.com/</a> with A. Farzanehfar & F. Houssiau (Imperial College)	AICrowd 2020-2021
<b>CASDataset 1.2-0</b> CASDataset R package  <a href="https://doi.org/10.57745/P0KHAG">doi:10.57745/P0KHAG</a> with C. Dutang (ENSIMAG)	R since 2015







## Dissemination

 <b>Blue sky account</b> <a href="https://bsky.app/profile/freakonometrics.bsky.social">@freakonometrics.bsky.social</a> Scientific dissemination	since 2024
 <b>Mastodon account</b> <a href="https://mstdn.social/@freakonometrics">@freakonometrics@mastodon.social</a> Scientific dissemination, ~ 6,700 followers	since 2022
 <b>Twitter account</b> <a href="https://twitter.com/freakonometrics">@freakonometrics</a> Scientific dissemination, ~ 28,100 followers	2010-2022
 <b>Hypotheses Blog Notebook</b> <a href="https://freakonometrics.hypotheses.org/">https://freakonometrics.hypotheses.org/</a> Scientific blogging	since 2008
• <i>Quinquennat Macron : quelle évolution du droit des assurances?</i>	Dalloz Actualité 2022
• <i>Rapport Langreny : lutter contre le désengagement des assureurs dans la ...</i>	Dalloz Actualité 2022
• <i>Arthur Charpentier on Freakonometrics, Machine Learning and Big Data</i>	Economic Rockstar 2018
• <i>Les Cat Bonds ont de l'avenir</i>	France Culture 2018
• <i>Coupe du Monde 2018 : des chercheurs de Rennes prévoient la victoire de la France</i>	RTL 2018
• <i>Peut-on vraiment prévoir la probabilité de gagner une élection présidentielle?</i>	La Tribune 2017
• <i>Le casino des catastrophes</i>	La Revue Dessinée 2016
• <i>How social media usage does and does not predict protests</i>	Washington Post, 2015
• <i>You can vote twice! The many political appeals of proxy votes in France</i>	Washington Post, 2014
see <a href="https://freakonometrics.github.io/dissemination/">https://freakonometrics.github.io/dissemination/</a> for more details	

## Interviews

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

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## Selected expertise

<b>France Stratégie - Cabinet du Premier Ministre</b> <i>Membre du groupe de travail sur la mutualisation des risques climatiques</i>	Paris, France 2024-2025
<b>International Monetary Fund (IMF)</b> <i>Assessing Central Bank Solvency</i>	Washington DC, US 2021
<b>International Fund for Agricultural Development (IFAD) United Nations</b> <i>NLP and Topic Modeling</i>	Roma, Italia 2020-2021
<b>HMG Finance</b> <i>First-In First-Out (FIFO) vs Last-In First-Out (LIFO), perpetual rents</i>	Paris, France 2012

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## Scientific Advisor

NeuroDrive, Krakn Behavioural <a href="https://krakn.fr">krakn.fr</a> , Paris, France	since 2025
Insightbounds, <a href="https://insightbounds.com">insightbounds.com</a> , Lloyd's Lab, London, U.K.	since 2025
Actuariat durable et IA, Chaire ILB, <a href="https://institutlouisbachelier.org">institutlouisbachelier.org</a> Paris	since 2025
Paris Agreement Research Commons, <a href="https://parc-research.org">parc-research.org</a> , Paris, France	since 2025
Nexialog, <a href="https://nexialog.com">nexialog.com</a> , Paris, France	since 2023
Alvidence, <a href="https://ai-vidence.com">ai-vidence.com</a> , Playground Paris-Saclay, France	since 2023

## Academic activities

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### Recent conferences organization

<b>Mathematical Advances on Emerging Risks</b> <i>with D. Hernández, D. Possamai, A. Réveillac, J. Ricalde Guerrero, T. Peyrat, C. Hillairet, ▶ (scientific &amp; organization committee)</i>	Merida, Mexico 2026
<b>Workshop on Sensitivity Analysis and Interpretable Machine Learning</b> <i>with N. Bousquet, M.P. Côté, F. Gamboa, M. Il Idrissi, B. Iooss, Y. Pequignot, ▶ (scientific &amp; organization committee)</i>	Montréal, Canada 2026
<b>Confidence and Fairness: Scientific Foundations in AI and Risk</b> <i>with A. Ly (scientific &amp; organization committee) </i>	Paris, France 2025
<b>Workshop on Probability and Machine Learning</b> <i>with H. Guérin, D.M. López, M. Morales, J.C. Pardo, V. Rivero ▶</i>	Guanajuato, Mexico 2025
<b>6th Insurance Data Science conference</b> <i>(scientific committee) ▶</i>	Hannover, Germany 2025
<b>2nd Workshop of Fairness and Discrimination in Insurance</b> <i>with M.-P. Côté (scientific &amp; organization committee) ▶</i>	Québec, Canada 2024



<b>5th Insurance Data Science conference</b> (scientific committee) ▶	Stockholm, Sweden 2024
<b>Networks, Games and Risk</b> with M. Ghossoub (scientific & organization committee) ▶	Montréal, Canada 2023
<b>5th Insurance Data Science conference</b> (scientific committee) ▶	London, UK 2023
<b>Modeling of Infectious Diseases Colloquium</b> with B. Nasri & H. Guérin (scientific & organization committee) ▶	CRM-Fields, Canada 2023
<b>Association for the Development of Research in Economics and Statistics</b> Annual Doctoral Conference of ADRES (scientific committee)	Paris, France 2022-2023
<b>Workshop of Fairness and Discrimination in Insurance</b> with M.-P. Côté (scientific & organization committee) ▶	Québec, Canada 2022
<b>Emerging Insights in Insurance Statistics</b> ✕ with E. Valdez, J. Cao & H. Jeong (scientific & organization committee) ▶	BIRS, Banff, Canada 2022
<b>MLISTRAL Machine Learning in Insurance, CIRM</b> (scientific committee) ▶	Marseille, France 2022
<b>4th Insurance Data Science conference</b> (scientific committee) ▶	Milano, Italia 2022
<b>Journées de la Statistique</b> SFdS (Société Française de Statistique) Annual Meeting (scientific committee)	Lyon, France 2022
<b>3rd Insurance Data Science conference</b> with M. Gesmann, S. Pesenti & A. Tsanakas (scientific & organization committee) ▶	online 2021
<b>36th Meeting of the Canadian Econometric Study Group</b> Machine Learning Econometrics, at UQAM (scientific committee)	Montréal, Canada 2019
<b>Atlantic Causal Inference Conference</b> University McGill (scientific committee)	Montréal, Canada 2019
<b>2nd Insurance Data Science conference</b> with M. Gesmann & A. Tsanakas (scientific committee) ▶	ETH Zürich, Switzerland 2019





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Selected presentations at conferences and workshops

<b>10th Annual Global Congress of Knowledge Economy (GCKE)</b> Disentangling Illegitimate and Indirect Discriminations (invited speaker)	Osaka 大阪市, Japan 2025
<b>60th Actuarial Research Conference</b> Balance and calibration (invited speaker)	York, Canada 2025
<b>Chaire ACTIONS</b> Spectrum of Fair Premiums (keynote speaker)	Paris, France 2025
<b>Journée d'Économétrie Appliquée</b> Calibration of Probabilistic Scores (invited speaker)	Montpellier, France 2025
<b>ACPR/Banque de France - Télécom Paris</b> Fairness in Insurance (invited speaker)	Paris, France 2025
<b>Canadian Econometrics Study Group (CESG)</b> Calibration of scoring functions (invited speaker)	Toronto, Canada 2024
<b>Statlab CRM, Université Laval</b> Algorithmic fairness with optimal transport (invited speaker)	Québec, Canada 2024

<b>Mathematical Foundations of AI Workshop</b>	Sorbonne Center for AI, Paris, France
<i>Optimal transport and algorithmic fairness (keynote speaker)</i>	2024
<b>Colloque l'assurance face à ses ruptures (CCIC)</b>	Cerisy, France
<i>Certitudes collective et incertitudes individuelles, les données ... (invited speaker)</i>	2024
<b>Workshop on decentralized insurance and risk sharing</b>	Chicago, IL, US
<i>Collaborative insurance, unfairness and discrimination (invited speaker)</i>	2024
<b>6th edition of the European Actuarial Journal Conference</b>	Lisbon, Portugal
<i>Calibration of insurance models</i>	2024
<b>27th International Congress on Insurance: Mathematics &amp; Economics</b>	Chicago, IL, US
<i>Optimal transport and Wasserstein barycenter for algorithmic fairness</i>	2024
<b>Optimization Days</b>	Montréal, Canada
<i>Market Pricing with Reinforcement Learning</i>	2024
<b>Optimal Transport Workshop</b>	Institut d'Etudes Scientifiques (IES), Cargèse, France
<i>Optimal transport for fairness (invited)</i>	2024
<b>Journée d'étude sur le blanchiment et la fraude</b>	Nîmes, France
<i>L'intelligence artificielle comme instrument de lutte contre le blanchiment (invited)</i>	2024
<b>6th Insurance Data Science Conference</b>	Stockholm, Sweden
<i>Optimal transport for fairness with multiple sensitive attributes</i>	2024
<b>Actuarial Science Workshop, SSC Annual Conference</b>	Carleton Univ., Ottawa, Canada
<i>Optimal transport for fairness, in insurance (invited speaker)</i>	2023
<b>Foundations and Applications of Decentralized Risk Sharing</b>	KU Leuven, Belgium
<i>Risk sharing on irregular networks (invited speaker)</i>	2023
<b>16th Annual Conference of Thailand Econometric Society</b>	Chiang Mai เมืองเชียงใหม่, Thailand
<i>Quantifying discrimination and fairness... (invited speaker)</i>	2023
<b>6th International Econometric Conference of Vietnam</b>	Thành phố Hồ Chí Minh, Vietnam
<i>Causal inference with optimal transport (invited speaker)</i>	2023
<b>Workshop on Impacts of Climate Change</b>	Fields Institute, Toronto, Canada
<i>Catastrophic risks and insurance (invited speaker)</i>	2022
<b>Deutsche Gesellschaft für Versicherungs- und Finanzmathematik (DGVMF) Deutschland</b>	
<i>A fair pricing model via adversarial learning (invited speaker)</i>	2022
<b>20 ans du Master d'Actuariat</b>	Universté Dauphine, Paris
<i>Climate risk and insurance fairness (invited speaker)</i>	2022
<b>Simulation &amp; IA 2022</b>	Cargèse, Università di Corsica, France
<i>Simulations and risk (keynote)</i>	2022
<b>Actuarial Sciences and Applications</b>	CIRM, Luminy, France
<i>Fairness in insurance pricing (keynote)</i>	2022
<b>CMStatistics</b>	King's College, London, UK
<i>Modeling Joint Lives within Families (invited speaker)</i>	2021
<b>Emeritaat Jan Beirlant</b>	Leuven, Belgium
<i>Extended Pareto distribution and applications (invited speaker)</i>	2021
<b>Justice sociale, l'équité et les discriminations dans les systèmes algorithmiques</b>	CNRS
<i>Assurance et discrimination (invited speaker)</i>	2021
<b>IAA (International Actuarial Association) Online Joint Section Colloquium</b>	
<i>Individual risks and collective decisions (invited speaker)</i>	2021






<b>Institut Universitaire de France (IUF) Conference</b> <i>Risque de pandémie, pertes d'exploitation et incertitudes (invited speaker)</i>	Le Mans, France 2021
<b>5e Conférence annuelle PANORisk</b> <i>Autocalibration and Insurance Pricing (invited speaker)</i>	Le Mans, France 2021
<b>SSC (Statistical Society of Canada) Annual Conference</b> <i>Autocalibration &amp; Premium Calculations (invited session)</i>	Canada 2021
<b>IME (Insurance: Mathematics &amp; Economics) Annual Conference</b> <i>Autocalibration &amp; Premium Calculations  (and panel discussion )</i>	Champaign, Illinois, US 2021
<b>ASTIN Annual Conference</b> <i>Autocalibration &amp; Premium Calculations</i>	Orlando, Florida, US 2021
<b>MODCOV19-CNRS</b> <i>Modèles épidémiologiques pour analyse coût-efficacité sous incertitude (invited speaker)</i>	Paris, France 2020
<b>Machine learning for economists and applied social scientists</b> <i>Machine Learning in Actuarial Science &amp; Insurance (plenary speaker )</i>	Hallifax, Canada 2020
<b>Actuarial and Financial Mathematics Conference</b> <i>Insurance Pricing in Competitive Markets (invited speaker)</i>	Brussels, Belgium 2020
<b>Online International Conference in Actuarial science and finance</b> <i>Modeling Joint Lives within Families</i>	Lyon, France 2020
<b>Risk Analytics Conference</b> <i>Actuarial Pricing and Competition, University of Illinois (keynote speaker)</i>	Chicago, US 2019
<b>UCSB InsurTech Summit</b> <i>Insurance Pricing in Competitive Markets (invited speaker)</i>	Santa Barbara, US 2019
<b>Natural Catastrophe Economics Workshop</b> <i>Assessing Probabilities with Climate Change (invited speaker)</i>	Zürich, Switzerland 2019
<b>XXVIIIth International Biometric Conference</b> <i>Collaborative Genealogical Data in Demography (invited session)</i>	Barcelona, España 2018
<b>European R Users Meeting </b> <i>Collaborative Genealogical Data in Demography (invited speaker)</i>	Budapest, Hungary 2018
<b>Ecole Thématique sur l'Evaluation des Politiques Publiques</b> <i>Evaluation du prejudice corporel en assurance automobile (invited speaker)</i>	Aussois, France 2018
<b>Big data empirics and policy analysis, Bank of England</b> <i>Insurance: Risk Pooling or Price Segmentation (keynote speaker)</i>	London, UK 2017
<b>Artificial Intelligence for fintech and insurtech</b> <i>Insurance Pricing and Competition (invited speaker)</i>	IHP, Paris, France 2017
<b>New challenges in the measurement of economic inequalities</b> <i>Extended Pareto Models and Incomes (invited speaker)</i>	Marseille, France 2017
<b>Cartostats</b> <i>La Ville en Économie (invited speaker)</i>	Université Paris Diderot, France 2017
<b>Dependence Modelling with Applications</b> <i>Insurance Pricing and Competition (invited speaker)</i>	Athens Αθήνα, Greece 2017
<b>Comprendre et Anticiper la Révolution du Numérique en Assurance</b> <i>Assurance et Responsabilité (invited speaker)</i>	Caen, France 2017
<b>Statistical Learning and Data Science</b> <i>Quantiles and Expectiles (invited speaker)</i>	Erasmus University, Rotterdam, Nederland 2017

<b>Sciences XXL</b>	INED, Paris, France
<i>Collaborative Data in Genealogy (invited speaker)</i>	2017
<b>3rd International MACroeconomics workshop (IMAC)</b>	Rennes, France
<i>From Micro to Macro (invited speaker)</i>	2016
<b>Ordinal and Multidimensional Inequalities</b>	Montpellier, France
<i>Pareto Models and Incomes (invited speaker)</i>	2016
<b>Droit des données personnelles</b>	Amiens, France
<i>Assurance &amp; RGPD (règlement général sur la protection des données) (invited speaker)</i>	2016
<b>3rd EAJ Conference (European Actuarial Journal)</b>	Lyon, France
<i>Big Data and Insurance (invited speaker)</i>	2016
<b>International Conference on Applied Business and Economics</b>	Nanterre, France
<i>Natural Catastrophes and Government Intervention</i>	2016
<b>Big Data : la recherche s'expose</b>	Paris, France
<i>Big Data and Insurance (invited speaker)</i>	2016
<b>Centre for Central Banking Studies</b>	Bank of England, London, UK
<i>Big Data and Insurance (keynote speaker)</i>	2016
<b>Asociación Española de Gerencia de Riesgos y Seguros</b>	Barcelona, España
<i>Machine Learning and Insurance (keynote speaker)</i>	2016
<b>Big Data &amp; Environment</b>	Buenos Aires, Argentina
<i>Impact of time Granularity on Statistical Modeling (invited speaker)</i>	2015
<b>IA BE Summer School</b>	Louvain, Belgium
<i>Machine Learning and Insurance (keynote speaker)</i>	2015
<b>ACP meeting</b>	Leuven, Belgium
<i>Big and Small Data in Insurance (invited speaker)</i>	2015
<b>Journées de Statistiques</b>	Lille, France
<i>Probit transformation for nonparametric kernel estimation of the copula density</i>	2015
<b>22nd International Forecasting Financial Markets Conference</b>	Rennes, France
<i>Copulas and Finance</i>	2015
<b>Insurance &amp; Finance Colloquium</b>	Le Mans, France
<i>Risk Measures and Pareto Models</i>	2015
<b>R in Insurance Conference</b>	London, UK
<i>Getting into Bayesian Wizardry... with the eyes of a muggle actuary (keynote speaker)</i>	2014
<b>SSC annual conference</b>	Toronto, Canada
<i>Risk Measures and Pareto Models (invited session)</i>	2014
<b>Mathematical Finance Days</b>	HEC Montréal, Canada
<i>Risk Measures and Pareto Models</i>	2014
<b>World Social Science Forum (UNESCO)</b>	Montréal, Canada
<i>Academic Blogging (invited session)</i>	2013
<b>Mathematical Finance Days</b>	HEC Montréal, Canada
<i>Quantiles Estimation from Heavy Tailed Distribution</i>	2013
<b>6th R/Rmetrics Summer School on Computational Finance</b>	Meielisalp, Switzerland
<i>Actuarial Science with R (invited speaker)</i>	2012
<b>Journées de la Société Canadienne de Sciences Économiques</b>	Mont Tremblant, Canada
<i>Modeling dynamic incentives an application to basketball</i>	2012

<b>Québec-Ontario Workshop on Insurance Mathematics</b> <i>Quantiles Estimation from Heavy Tailed Distribution</i>	Montréal, Canada 2012
<b>Mathematical Finance Days</b> <i>Fast Computations on Binomial Trees</i>	HEC Montréal, Canada 2012
<b>Journées de la Société canadienne de sciences économiques</b> <i>Insurance of Natural Catastrophes When Should Government Intervene?</i>	Sherbrooke, Canada 2011
<b>Changement climatique et gestion des risques</b> <i>Modeling heat-waves: return period for non-stationary extremes</i>	Lyon, France 2011
<b>Journées d'Etudes Statistique</b> <i>Copulas, Insurance and Risk Measures (invited speaker)</i>	Luminy, France 2010
<b>IA-Lyon Summer School</b> <i>Solvency II' newspeak 'one year uncertainty for IBNR' : the bootstrap approach</i>	Lyon, France 2010
<b>Financial Risks International Forum</b> <i>Multiple Risk Measures</i>	Paris, France 2010
<b>Assessment and Mitigation of Emerging Risks</b> <i>Emerging risks: an actuarial perspective</i>	Paris, France 2009
<b>R.I.S.K. Symposium</b> <i>Incertitude des régimes des retraites</i>	Paris, France 2009
<b>Workshop Finance &amp; Insurance</b> <i>Estimation of quantile related risk measures (invited speaker)</i>	Sao Paulo, Brasil 2009
<b>Workshop on Actuarial Science</b> <i>IBNR and quantification of uncertainty</i>	Belo Horizonte, Brasil 2009
<b>7th International Workshop on Rare Event Simulation (RESIM)</b> <i>Optimal Reinsurance with ruin probability target</i>	Rennes, France 2008
<b>Deutsche Mathematiker-Vereinigung, Humboldt-Universität</b> <i>Estimating (properly) copula densities in tails</i>	Berlin, Deutschland 2007
<b>Conference Insurance Mathematics &amp; Economics</b> <i>Extremes for Archimedean copulas</i>	Leuven, Belgium 2006
<b>Extreme Values, Copulas and Applications Day, UdeM</b> <i>Estimating (properly) copula densities in tails</i>	Montréal, Canada 2005
<b>Conference Insurance Mathematics &amp; Economics</b> <i>Can one model natural hazards independently</i>	Québec, Canada 2005
<b>XXXVIèmes Journées de statistique</b> <i>Distribution limite des structures de dépendance dans des processus de défauts</i>	Montpellier, France 2004
<b>3rd Conference in Actuarial Science &amp; Finance on Samos</b> <i>Extreme and dependence, a copula approach</i>	Samos Σάμος, Greece 2004
<b>Dependence Modelling: Statistical theory and applications</b> <i>Limiting dependence structure for credit defaults</i>	Québec, Canada 2004
<b>Statistical Issues in Actuarial Risk Modelling, Eurandom</b> <i>Dependence in tail distributions</i>	Eindhoven, Nederland 2003
<b>XXXVIIIèmes Journées de statistique</b> <i>Extremes for Archimedean copulas</i>	Clamart, France 2003
<b>Conference Insurance Mathematics &amp; Economics</b> <i>Tail distribution and dependence measures</i>	Lyon, France 2003

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## Selected talks at academic seminars



ESSEC Working Group on Risk	Singapore, 2026
ESSEC Asia-Pacific Faculty Seminar	Singapore, 2026
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	Bunkyo, 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	København, 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 Working Group on Risk	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

<i>ESSEC Working Group on Risk</i>	<i>Paris, France, 2018</i>
<i>Université Laval, Economics Seminar</i>	<i>Québec, Canada, 2018</i>
<i>University of Michigan, Mathematics Seminar</i>	<i>Ann Arbor, US, 2017</i>
<i>Université de Caen, Economics Seminar</i>	<i>Caen, France, 2017</i>
<i>Université Paris Diderot, Statistics Seminar</i>	<i>Paris, France, 2016</i>
<i>Université Catholique de Louvain</i>	<i>Louvain, Belgium, 2015</i>
<i>GERAD, Université de Montréal</i>	<i>Montréal, Canada, 2014</i>
<i>Université Laval, Computational Science Seminar</i>	<i>Quebec, Canada, 2014</i>
<i>Centro de Investigación en Matemáticas</i>	<i>Guanajuato, Mexico, 2014</i>
<i>Universiteit van Amsterdam</i>	<i>Amsterdam, Nederland, 2013</i>
<i>HEC Lausanne, Actuarial Seminar</i>	<i>Lausanne, Switzerland, 2013</i>
<i>GeoTop, UQAM</i>	<i>Montréal, Canada, 2012</i>
<i>Université Laval, Statistical Seminar</i>	<i>Québec, Canada, 2011</i>
<i>Université Laval, Business School Seminar</i>	<i>Québec, Canada, 2011</i>
<i>Université Laval, Actuarial Seminar</i>	<i>Québec, Canada, 2011</i>
<i>HEC Montréal</i>	<i>Montréal, Canada, 2010</i>
<i>McGill University, Statistical Seminar</i>	<i>Montréal, Canada, 2010</i>
<i>Université de Rennes, Economics Seminar</i>	<i>Rennes, France, 2010</i>
<i>ESSEC Risk Seminar</i>	<i>Paris, France, 2009</i>
<i>Université de Montpellier</i>	<i>Montpellier, France, 2009</i>
<i>Université de Brest</i>	<i>Brest, France, 2009</i>
<i>Université de Rennes</i>	<i>Rennes, France, 2008</i>
<i>Université de Nantes</i>	<i>Nantes, France, 2008</i>
<i>Université Pierre &amp; Marie Curie</i>	<i>Paris, France, 2008</i>
<i>Universiteit van Amsterdam</i>	<i>Amsterdam, Nederland, 2008</i>
<i>Université de Toulouse 1</i>	<i>Toulouse, France, 2007</i>
<i>Imperial College</i>	<i>London, UK, 2007</i>
<i>PSE ENS Cachan</i>	<i>Paris, France, 2007</i>
<i>Université de Grenoble</i>	<i>Grenoble France, 2007</i>
<i>Université Paris Nanterre</i>	<i>Nanterre, France, 2007</i>
<i>Université de Compiègne</i>	<i>Compiègne, France, 2007</i>
<i>Hong Kong University 香港大學</i>	<i>Hong Kong 香港, China 中国, 2007</i>
<i>Universidad de Valparaíso</i>	<i>Valparaíso, Chile, 2006</i>
<i>ENSAI</i>	<i>Rennes, France, 2006</i>
<i>PSE Paris Sorbonne</i>	<i>Paris, France, 2006</i>
<i>Katholieke Universiteit Leuven</i>	<i>Leuven, Belgium, 2006</i>
<i>Institut de Mathématiques Appliqués</i>	<i>Angers, France, 2006</i>

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Selected talks and presentations at practitioners & student seminars

<b>AXA Direct Assurance Meetings</b> <i>Lorenz curves and calibration (keynote speaker)</i>	Paris, France 2025
<b>AXA Pricing Family Meetings</b> <i>Discrimination and fairness in ratemaking (keynote speaker)</i>	Paris, France 2025
<b>SCOR monthly webinar</b> <i>Econometrics or Machine Learning</i>  (keynote speaker)	Paris, France (online) 2025
<b>Institut des Actuaire Annual Meeting</b> <i>Causal modeling for actuaries</i>	Paris, France 2025
<b>R&amp;D Workshop, SCR (Société Centrale de Réassurance)</b> <i>Fairness and Insurance (keynote speaker)</i>	Morocco, المغرب 2025
<b>Association des Masters d'Actuariat</b> <i>AI, biases and fairness, in insurance and actuarial science (keynote speaker)</i> 	France 2025
<b>Institut des Actuaire</b> <i>Fairness and discrimination</i>  (keynote)	Paris, France (online) 2025
<b>Institut Luxembourgeois des Actuaire (ILAC) Annual Meeting</b> <i>Discrimination, fairness and interpretability (keynote speaker)</i>	Luxembourg 2025
<b>Milliman R&amp;D Seminar</b> <i>A Spectrum of Fair Premiums, an Introduction (keynote)</i>	France 2025
<b>Financial Conduct Authority (FCA)</b> <i>Demystify fairness and discrimination in insurance, and avoid some pitfalls (keynote)</i>	London, UK 2024
<b>Workshop on Trustworthy AI</b> <i>Insurance, discrimination and fairness</i>	Montréal, Canada 2024
<b>Institut des Actuaire Annual Meeting</b> <i>Heat waves and subsidence</i>	Paris, France 2024
<b>Actuarial Contact Program, ACP – KUL</b> <i>From contemplative to predictive modeling in actuarial science and risk management</i>	Leuven, Belgium 2024
<b>Groupe de Travail 'Mutualisation des risques', France Stratégie</b> <i>Member of group, various participations and presentations</i>	Paris, France 2024
<b>SCOR monthly webinar</b> <i>Scope and limits of artificial intelligence</i> 	Paris, France (online) 2024
<b>TD General Insurance Pricing Seminar</b> <i>Fairness and Ethics in Actuarial Pricing</i>	Montréal, Canada 2024
<b>Akur8 Technical Seminar</b> <i>Ethics in Actuarial Pricing, and equity</i>	Paris, France (online) 2024
<b>Chaire Thélem / ILB</b> <i>Fairness and Ethics in Actuarial Pricing</i>	Orléans, France 2024
<b>Data Talk Generali</b> <i>Fairness and Ethics in Actuarial Pricing</i>	Paris, France 2024
<b>Colloque Actuariat Francophone</b> <i>La mutualisation et l'inclusion à l'épreuve de la segmentation (invited speaker)</i> 	Paris, France 2023
<b>TD Insurance Data Analytics Seminar</b> <i>Fairness and Ethics in Actuarial Pricing</i>	Montréal, Canada 2023

<b>Intact Seminar</b> <i>Causal Models for Discrimination in Insurance</i>	Montréal, Canada 2023
<b>Akur8 Pricing Seminar</b> <i>Fairness and Ethics in Actuarial Pricing</i>	Paris, France 2023
<b>Conference Data Science Institute</b> <i>Les enjeux des risques climatiques en assurance de dommages</i>	Montréal, Canada 2023
<b>Table ronde sur la pratique actuarielle, AG2R</b> <i>Perspective de la pratique actuarielle</i>	Paris, France 2023
<b>3e Colloque International de l'Actuariat Francophone</b> <i>La mutualisation et l'inclusion à l'épreuve de la segmentation</i>	Paris, France 2023
<b>Journée d'étude AIvidence</b> <i>Machine Learning with Fairness Constraints</i>	Paris, France 2023
<b>Data Science Webinar, Institut du Risk Management</b> <i>Machine Learning with Fairness Constraints</i> 	Paris, France 2023
<b>Service Juridique France Assureurs</b> <i>Insurance &amp; 'high-risk' AI systems - EU AI Act</i>	Paris, France 2023
<b>Comité Corporel de France Assureurs</b> <i>To Sue or not to Sue</i>	Paris, France 2023
<b>Colloque SCOR-Institut des Actuaire</b> <i>Assurance collaborative, théorie des graphes et actuariat</i>	Paris, France 2022
<b>Beneva (La Capitale &amp; SSQ Assurance)</b> <i>Competitions in insurance markets</i>	Québec, Canada 2022
<b>Optimind Webinar</b> <i>La non-discrimination dans l'usage des données et les modèles actuariels</i>	Paris, France 2022
<b>Cov&amp;Data, Covea (MAAF, MMA &amp; GMF)</b> <i>Interpretability of predictive models</i>	Paris, France 2022
<b>100% Data Science, Institut des Actuaire Annual Meeting</b> <i>Are you a probability?</i>	Paris, France 2022
<b>DataDay MAIF</b> <i>Data and climate change</i>	Niort, France 2022
<b>Casualty Actuarial and Statistical Task Force (CASTF), NAIC</b> <i>An introduction to Bayesian models</i>	Washington, DC, USA 2022
<b>Journées actuarielles - Actuarial Days - Groupama</b> <i>Flood and subsidence</i>	Paris, France 2022
<b>Chaire DIALog (digital insurance and long term risk)</b> <i>Insurance, fairness and discrimination</i>	Paris, France 2022
<b>Institut des Actuaire &amp; Institut Louis Bachelier</b> <i>Vision bayésienne de l'apprentissage</i> 	Paris, France 2022
<b>ASTIN – International Actuarial Association</b> <i>Insurance: discrimination and fairness</i>	Ottawa, Canada 2022
<b>Journée de l'actuariat IARD (Institut des Actuaire)</b> <i>Machine Learning : de la promesse à la réalité (table ronde)</i>	Paris, France 2022
<b>IVADO (Communauté de pratique)</b> <i>Insurance: biases, discrimination &amp; fairness</i>	Montréal, Canada 2022



<b>COV&amp;Data Conference: IA de confiance</b> <i>Insurance: biases, discrimination &amp; fairness</i>	Paris, France 2022
<b>AXA Actuarial Conference # 62</b> <i>Catastrophic Climate risks and Insurance</i>	Paris, France 2022
<b>100% Data Science, Institut des Actuaire Annual Meeting</b> <i>Modeling subsidence risk in France</i>	Paris, France 2021
<b>Institut Louis Bachelier &amp; Institut des Actuaire</b> <i>Assurance collaborative : Théorie des graphes et Actuariat</i> 	Paris, France 2021
<b>TD Insurance</b> <i>Insurance pricing in competitive markets</i>	Montréal, Canada 2020
<b>Autorité de contrôle prudentiel et de résolution (ACPR)</b> <i>Insurance pricing in competitive markets</i>	Paris, France 2019
<b>SCOR, Rencontres Mutualistes</b> <i>Insurance pricing in competitive markets</i>	Beaune, France 2018
<b>AON Benfield, Journées du marché</b> <i>Insurance and climate</i>	Paris, France 2018
<b>Data science conference, Generali</b> <i>Machine learning in insurance</i>	Paris, France 2016
<b>Institut des Actuaire, Big Data Semimar</b> <i>Machine learning in insurance</i>	Paris, France 2015
<b>Society of Actuaries, Predictive Modeling Seminar</b> <i>From Generalized Linear Models to Trees</i>	Chicago, IL, US 2013
<b>Desjardins Reserving Seminar</b> <i>One-year uncertainty</i>	Montréal, Canada 2011
<b>Milliman Reserving Seminar</b> <i>One-year uncertainty</i>	Paris, France 2010

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## 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; EGU sphere; 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 Research (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 Research (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*

*FRQNT (Quebec) Canada*

*Mathematics and Statistics Evaluation Group (EG 1508) 2022-2025*

*NSERC (Canada)*

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Selected research visits and invitations (> 1 week)

**ESSEC Singapore**  
visiting Pierre Alquier

Singapore  
2026

<b>Tsinghua University, 清华大学</b> visiting Runhuan Feng 冯润桓	Haidian, Beijing 海淀区, China 中华人民共和国 2026
<b>ENSAE Institut Polytechnique</b> visiting Caroline Hillairet	Saclay, France 2024
<b>University of California</b> visiting Mike Ludkovski	Santa Barbara, CA, US 2019
<b>Universitat de Barcelona</b> visiting Montserrat Guillen	Barcelona, España 2018
<b>Università degli Studi dell'Insubria</b> visiting Raffaello Seri	Varese, Italia 2018
<b>Harvard University</b> visiting Christine Choirat & Pierre Jacob	Cambridge, US 2017
<b>Universitat de Barcelona</b> visiting Montserrat Guillen	Barcelona, España 2016
<b>Centro de Investigación en Matemáticas</b> visiting Victor Rivero	Guanajuato, Mexico 2014
<b>Universidade Federal de Minas Gerais</b> visiting Renato Assunção	Belo Horizonte, Brasil 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

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#### Bachelor (BSc) students (since 2025)

Allison Lara Nieva <a href="#">in</a>	Universidad Nacional Autónoma de México, 2025
Iryna Voitsitska, Ірина Войціцька <a href="#">in</a>	Український Католицький Університет, Ukraine Україна, 2025
Mahery Andriamadison <a href="#">in</a>	Sorbonne Université, Paris, France, 2025

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#### Master (MSc) students (since 2020)

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



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## PhD Students supervision (3 ongoing, 5 completed)

<p>► <b>Agathe Fernandes Machado</b>  </p> <p><i>Fairness and causal models, co-supervised with E. Gallic (Aix-Marseille University)</i> 2023-today</p> <p>* OBVIA PhD Grant</p>
<p>► <b>Olivier Côté</b>  </p> <p><i>Predictive Models, Interpretability and Explainability, co-supervised with M.P. Côté (Laval)</i> 2023-today</p> <p>* NSERC PhD Grant, Hickman Scholars Fellowship</p>
<p>► <b>Hongda Hu</b>  </p> <p><i>Bandits and risks, co-supervised with M. Ghossoub &amp; A. Schied (Waterloo)</i> 2020-today</p>
<p><b>Samuel Stocksieker</b> then Aix-Marseille University  </p> <p><i>Unbalanced Data, co-supervised with D. Pommeret</i> 2020-2024</p> <p>* Best actuarial thesis (SCOR Prize 2025)</p>
<p><b>Philipp Ratz</b> then FEDRO research fellow   </p> <p><i>Constraints in Fair Estimation and Games</i> 2021-2024</p>
<p><b>Enora Belz</b> then Excelcio </p> <p><i>Etude de données agrégées et mesures d'inégalités</i> 2016-2021</p>
<p><b>Antoine Ly</b> then CDSO at SCOR  </p> <p><i>Algorithmes de machine learning en assurance, co-supervised with R. Élie</i> 2015-2019</p>
<p><b>Amadou Barry</b> then McGill  </p> <p><i>Régression expectile pour données longitudinales, co-supervised with K. Oualkacha</i> 2013-2019</p>









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## 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)

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## Post-doctoral supervision (2 ongoing, 5 completed)

<p>► <b>Arsene-Brice Zotsa Ngoufack</b>  </p> <p><i>Generative models with diffusion, co-supervised with H. Guérin (UQAM)</i> 2024-2025</p>
<p>► <b>Marouane Il-Idrissi</b>   </p> <p><i>Interpretability and fairness, co-supervised with M.P. Côté (Laval University)</i> 2024-2026</p> <p>* CANSSI Distinguished Postdoctoral Fellowship</p>
<p><b>François Hu</b> then Milliman R&amp;D,   </p> <p><i>Fairness, co-supervised with M. Moralès (UdeM)</i> 2022-2024</p>

<b>Félix Foutel Rodier</b> <i>Mathematical models for pandemics, co-supervised with H. Guérin</i>	then Oxford University 	2021-2022
<b>Amirouche Benchallal</b> <i>Extracting information from satellite pictures, with Y. Bouroubi</i>	then Natural Resources Canada 	2021-2022
<b>Ewen Gallic</b> <i>Extracting information from collaborative genealogical data</i>	then Aix-Marseille Univ. (AMSE)  	2017-2018
<b>Arnaud Goussebaïle</b> <i>Insurance and prevention of natural catastrophes</i>	then ETH Zürich  	2016-2017

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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 Poinot (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); Nouredine Ben Lagha (Université Paris II Assas)

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

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Jury (Prices)

<b>Journal of Risk and Insurance</b> <i>Jury for Robert I. Mehr Award</i>	2023
<b>Annals of Economics and Statistics</b> <i>Jury for the best young researcher paper</i>	2021,2022
<b>Scor Actuarial Price</b> <i>Jury for MSc and PhD Best Thesis Prices</i>	since 2023

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## 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 3980 citations (<sup>8</sup>, 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 28 working papers (most available on ArXiv).

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### Published papers in peer reviewed journals (50)

1. H.Hu<sup>\*</sup>, 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<sup>+</sup>, 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<sup>\*</sup> & A.Charpentier (2024). Artificial Intelligence and Personalization of Insurance: Failure or Delayed Ignition? *Big Data & Society*, doi:10.1177/20539517241291817
4. O.Côté<sup>\*</sup>, 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<sup>\*</sup>, 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<sup>\*</sup>, 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<sup>\*</sup>, 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*, 

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<sup>\*</sup>: graduate student; <sup>+</sup>: postdoctoral fellow



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* 
14. A.Charpentier & E.Flachaire (2022). Pareto Models for Top Incomes and Wealth. *Journal of Economic Inequality*, **20** [doi:10.1007/s10888-021-09514-6](https://doi.org/10.1007/s10888-021-09514-6) 
15. A.Charpentier, M.James\* & H.Ali (2021). Predicting Drought and Subsidence Risks in France, *Natural Hazards and Earth System Sciences*, **22**, 2401–2418, [doi:10.5194/nhess-2021-214](https://doi.org/10.5194/nhess-2021-214)
16. A.Charpentier, M.Denuit & J.Trufin (2021). Autocalibration and Tweedie-dominance for Insurance Pricing with Machine Learning. *Insurance: Mathematics and Economics*, **101**, 485–497, [doi:10.1016/j.insmatheco.2021.09.001](https://doi.org/10.1016/j.insmatheco.2021.09.001) 
17. A.Barry\*, A.Charpentier & K.Oualkacha (2022) A new GEE method to account for heteroscedasticity, using asymmetric least-square regressions. *Journal of Applied Statistics*, **49**, 3564–3590, [doi:10.1080/02664763.2021.1957789](https://doi.org/10.1080/02664763.2021.1957789)
18. A.Charpentier, R.Élie & C.Remlinger\* (2021) Reinforcement Learning in Economics and Finance. *Computational Economics*, [doi:10.1007/s10614-021-10119-4](https://doi.org/10.1007/s10614-021-10119-4)
19. A.Charpentier, L.Barry & M.James\* (2022) Insurance against Natural Catastrophes: Balancing Actuarial Fairness and Social Solidarity. *Geneva Papers on Risk & Insurance*, **47**, 50–78, [doi:10.1057/s41288-021-00233-7](https://doi.org/10.1057/s41288-021-00233-7) 
20. A.Charpentier, S.Mussard & T.Ouraga\* (2021) Principal Component Analysis: A Generalized Gini Approach. *European Journal of Operational Research*, **294** [doi:10.1016/j.ejor.2021.02.010](https://doi.org/10.1016/j.ejor.2021.02.010) 
21. A.Charpentier, R.Élie, M.Laurière+ & V.C.Tran (2020) COVID-19 pandemic control: balancing detection policy and lockdown intervention under ICU sustainability. *Mathematical Modelling of Natural Phenomena* [doi:10.1051/mmnp/2020045](https://doi.org/10.1051/mmnp/2020045)
22. L.Barry & A.Charpentier (2020) Personalization as a Promise: Can Big Data Change the Practice of Insurance?. *Big Data & Society*. [doi:10.1177/2053951720935143](https://doi.org/10.1177/2053951720935143)
23. A.Charpentier & E.Gallic+ (2020) Can historical demography benefit from the collaborative data of genealogy websites?. *Population*, [doi:10.3917/popu.2002.0391](https://doi.org/10.3917/popu.2002.0391) 
24. A.Charpentier & E.Gallic+ (2019) Using collaborative genealogy data to study migration: a research note. *The History of the Family*, [doi:10.1080/1081602X.2019.1641130](https://doi.org/10.1080/1081602X.2019.1641130), , 
25. A.Charpentier, N.Ka\*, S.Mussard & O.H.Ndiaye (2019) Gini Regressions and Heteroskedasticity. *Econometrics*, **7**, [doi:10.3390/econometrics7010004](https://doi.org/10.3390/econometrics7010004)
26. A.Charpentier, E.Flachaire & A.Ly\* (2018) Econometrics and Machine Learning. *Economics & Statistics*, [doi:10.24187/ecostat.2018.505d.1970](https://doi.org/10.24187/ecostat.2018.505d.1970)
27. A.Charpentier & B.Coulmont (2018) We are not alone ! (at least, most of us aren't) *Significance*, [doi:10.1111/j.1740-9713.2018.01108.x](https://doi.org/10.1111/j.1740-9713.2018.01108.x) 
28. A.Charpentier, A.David\* & R.Élie (2017) Optimal Claiming Strategies in Bonus Malus Systems and Implied Markov Chains. *Risks*, [doi:10.3390/risks5040058](https://doi.org/10.3390/risks5040058)















29. G.Geenens, A.Charpentier & D.Paindaveine (2017) Probit transformation for nonparametric kernel estimation of the copula density. *Bernoulli* doi:10.3150/15-BEJ798
30. A.Charpentier, A.Galichon & M.Henry (2016) Local Utility and Multivariate Risk Aversion. *Mathematics of Operations Research*, 41: 466-476 doi:10.1287/moor.2015.0736
31. A.Charpentier & E.Gallic\* (2016) Kernel density estimation based on Ripley's correction. *Geoinformatica*, 20: 95-116, 2016 doi:10.1007/s10707-015-0232-z 
32. A.Charpentier & E.Flachaire (2015) Log-transform kernel density estimation of income distribution. *L'Actualité Economique*, 91 :141-149, doi:10.7202/1036917ar
33. C.Tavéra, J.-C.Poutineau, J.-S.Pentecôte, I. Cadoret-David, A.Charpentier, C.Guéguen, M.Huchet-Bourdon, J.Licheron\* & G.L'Oeillet\* (2015) The "Mother of All Puzzles" at thirty: a meta-analysis. *International Economics*, 141 :80-96, doi:10.1016/j.inteco.2015.01.001
34. M.T.Bastos, D.Mercea & A.Charpentier (2015) Tents, Tweets, and Events: The Interplay Between Ongoing Protests and Social Media. *Journal of Communication*, 65: 320–350, doi:10.1111/jcom.12145
35. A.Charpentier & B.Le Maux (2014) Natural catastrophe insurance: How should the government intervene?. *Journal of Public Economics*, 115: 1-17, doi:10.1016/j.jpubeco.2014.03.004
36. A.Charpentier & M.Durand\* (2015) Modeling earthquake dynamics. *Journal of Seismology*, 19: 721-739, doi:10.1007/s10950-015-9489-9
37. A.Charpentier, A.-L.Fougères, C.Genest & J.G.Nešlehová (2014) Multivariate Archimax copula. *Journal of Multivariate Analysis*, doi:10.1016/j.jmva.2013.12.013
38. A.Charpentier & S.Mussard (2011) Income Inequality Games. *Journal of Economic Inequality*, 9: 529–554, 20 doi:10.1007/s10888-011-9184-1
39. A.Charpentier (2011) On the return period of the 2003 heat wave. *Climatic Change*, 109: 245–260, doi:10.1007/s10584-010-9944-0
40. A.Charpentier & A.Oulidi<sup>+</sup> (2010) Beta kernel quantile estimators of heavy-tailed loss distributions. *Statistics and Computing*, 20: 35–55, doi:10.1007/s11222-009-9114-2
41. A.Charpentier & A.Oulidi<sup>+</sup> (2009) Estimating allocations for value-at-risk portfolio optimization. *Mathematical Methods of Operations Research*, 69: 395, doi:10.1007/s00186-008-0244-7
42. A.Charpentier & J.Segers (2009) Tails of multivariate Archimedean copulas. *Journal of Multivariate Analysis*, 100: 1521–1537, 2009 doi:10.1016/j.jmva.2008.12.015
43. A.Charpentier & D. Sibai\* (2009) Dynamic flood modeling: combining Hurst and Gumbel's approach. *Environmetrics*, 20: 32–52, doi:10.1002/env.909
44. A.Charpentier (2008) Insurability of climate risks. *The Geneva Papers on Risk and Insurance*, 33: 91–109, doi:10.1057/palgrave.gpp.2510155
45. A.Charpentier (2008) Dynamic dependence ordering for Archimedean copulas and distorted copulas. *Kybernetika*, doi:10338.dmlcz/135890
46. A.Charpentier & J.Segers (2008) Convergence of Archimedean copulas. *Statistics and Probability Letters*, doi:10.1016/j.spl.2007.07.014

47. A.Charpentier & J.Segers (2007) Lower tail dependence for Archimedean copulas: Characterizations and pitfalls. *Insurance: Mathematics and Economics*, doi:10.1016/j.insmatheco.2006.08.004
48. A.Charpentier & A.Juri (2006) Limiting dependence structures for tail events, with applications to credit derivatives. *Journal of Applied Probability*, doi:10.1239/jap/1152413742
49. J.-C.Boüette\*, J.-F.Chassagneux\*, D.Sibaï\*, R.Terron\* & A.Charpentier (2006) Wind in Ireland: long memory or seasonal effect?. *Stochastic Environmental Research and Risk Assessment*, doi:10.1007/s00477-005-0029-y
50. A.Charpentier (2006) Actuariat et data mining: prise en compte des dépendances. *Revue des Nouvelles Technologies de l'Information*, isbn:978-2-85428-794-3

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**Published papers in peer reviewed conferences (17)**







51. B.Tierny\*, A.Charpentier & F.Hu (2025). Decomposing Direct and Indirect Biases in Linear Models under Demographic Parity Constraint. *40th Annual AAAI Conference on Artificial Intelligence* doi:10.48550/ arXiv.2511.11294 (+ student presentation)
52. C.Mussard\*, A.Charpentier & S.Mussard (2025). KNN and K-means in Gini Prametric Spaces. *28th European Conference on Artificial Intelligence (ECAI 2025)* doi:10.48550/arXiv.2501.18028
53. M.El-Idrissi<sup>+</sup>, A.Fernandes-Machado\* & A.Charpentier (2025). Beyond Shapley Values: Cooperative Games for the Interpretation of Machine Learning Models. *IJCAI Workshop on Explainable Artificial Intelligence* doi:10.48550/arXiv.2506.13900
54. A.Fernandes-Machado\*, A.Charpentier & E.Gallic (2025). Optimal Transport on Categorical Data for Counterfactuals using Compositional Data and Dirichlet Transport. *34th International Joint Conference on Artificial Intelligence (IJCAI'25)* doi:10.24963/ijcai.2025/572 
55. S.Stocksieker, D.Pommeret & A.Charpentier (2025). Disentangled Deep Smoothed Bootstrap for Fair Imbalanced Regression. *29th International Conference on Knowledge-Based and Intelligent Information & Engineering Systems (KES'25)* doi:10.1016/j.procs.2025.09.519
56. S.Stocksieker, D.Pommeret & A.Charpentier (2025). KurtHGR: A Neural Maximal Correlation for Tabular Datasets. *29th International Conference on Knowledge-Based and Intelligent Information & Engineering Systems (KES'25)* doi:10.1016/j.procs.2025.09.338
57. S.Stocksieker, D.Pommeret & A.Charpentier (2025). Delving into Deep Smoothed Bootstrap: Application in Imbalanced Regression. *12th IEEE International Conference on Data Science and Advanced Analytics (DSAA 2025)*
58. A.Fernandes-Machado\*, A.Charpentier & E.Gallic (2025). Sequential Conditional Transport on Probabilistic Graphs for Interpretable Counterfactual Fairness. *39th Annual AAAI Conference on Artificial Intelligence (AAAI 2025)* doi:10.1609/aaai.v39i18.34131%20 
59. S.Stocksieker\*, D.Pommeret & A.Charpentier (2024). Data Augmentation with Variational Autoencoder for Imbalanced Dataset. *31st International Conference on Neural Information Processing (ICONIP 2024)* doi:10.48550/arXiv.2412.07039




60. A.Fernandes-Machado\*, A.Charpentier, E.Flachaire, E.Gallic & F.Hu (2024). Post-Calibration Techniques: Balancing Calibration and Score Distribution Alignment. *Thirty-Eighth Annual Conference on Neural Information Processing Systems (NeurIPS 2024) BDU Workshop*, [openreview:Tly0QuWPuE](#), , and 
61. S.Stocksieker\*, D.Pommeret & A.Charpentier (2024). Boarding for ISS: Imbalanced Self-Supervised: Discovery of a Scaled Autoencoder for Mixed Tabular Datasets. *International Joint Conference on Neural Networks (IJCNN 2024) - IEEE World Congress on Computational Intelligence (IEEE WCCI 2024)* [doi:10.1109/IJCNN60899.2024.10650790](#)
62. F.Hu<sup>+</sup>, P.Ratz\* & A.Charpentier (2024). A Sequentially Fair Mechanism for Multiple Sensitive Attributes. *38th Annual AAAI Conference on Artificial Intelligence (AAAI 2024)*, [doi:10.1609/aaai.v38i11.29143](#) , , and 
63. A.Charpentier, F.Hu<sup>+</sup>, & P.Ratz\* (2023) Mitigating Discrimination in Insurance with Wasserstein Barycenters. *3rd Workshop on Bias and Fairness in AI (BIAS 2023)*, [10.1007/978-3-031-74630-7\\_11](#), 
64. F.Hu<sup>+</sup>, P.Ratz\* & A.Charpentier (2023). Fairness in Multi-Task Learning via Wasserstein Barycenters. *Machine Learning and Knowledge Discovery in Databases: Research Track (ECML/PKDD 2023)* [10.1007/978-3-031-43415-0\\_18](#), 
65. S.Stocksieker\*, A.Charpentier & D.Pommeret (2023). Data Augmentation for Imbalanced Regression. *Proceedings of The 26th International Conference on Artificial Intelligence and Statistics (AISTATS 2023)*, 7774–7799, [PMLR 206:7774-7799](#), , , 
66. A.Charpentier & L.Barry (2022). The fairness of machine learning in insurance. *Montréal AI Symposium (MAIS 2022)*, [arXiv:2205.08112](#), 
67. A.Charpentier (2008). Pricing catastrophe options in incomplete markets. *Actuarial and Financial Mathematics Conference*, Gand, Belgium, 19–31

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## Books (7)







































68. A.Charpentier (2024). Insurance, biases, discrimination and fairness. Springer Nature . [ISBN 9783031497827](#) , InsurFair package 
69. G. Bénéplanc, A.Charpentier & P. Thourot (2022). Manuel de l'Assurance. Presses Universitaires de France. [ISBN 9782130832935](#) 
70. A.Charpentier (2015). Computational Actuarial Science with R. CRC Press. [ISBN 9781138033788](#), R Casdataset package 
71. A.Charpentier & C. Dutang (2013). Actuariat avec R. CRAN. 












72. M.Denuit & A.Charpentier (2005) Mathématiques de l'assurance non-vie - Tarification et provisionnement (Tome 2). Economica (ESA). [ISBN 9782717848601](#)  (english)
73. M.Denuit & A.Charpentier (2004) Mathématiques de l'assurance non-vie - Principes fondamentaux de théorie du risque (Tome 1). Economica (ESA). [ISBN 9782717848540](#) 
74. Collective Actuarial Community Loss Data Analytics. An open text authored by the Actuarial Community. 2019. 

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#### Published papers in French & Dissemination papers (56)


75. A.Charpentier (2025). Et si on misait enfin sur la prévention ? *Risques*.
76. A.Charpentier (2025). L'impossible droit à l'erreur, l'impossible droit à l'oubli ? *Risques*.
77. L.Barry & A.Charpentier (2025). Repenser collectivement les catastrophes. *Risques*.
78. A.Charpentier (2025). Les paradoxes de la segmentation et de la discrimination en assurance. *Risques*.
79. A.Charpentier & B.Cherrier (2025). Comment escompter le futur ? *Risques*
80. A.Charpentier & E.Flachaire (2025). Machine Learning et Économie. *Revue d'Économie Politique*, [10.3917/redp.346.0801](#)
81. A.Charpentier & N.Marescaux (2024). Comment dépasser la froideur des chiffres, et agir? *Risques*, 
82. A.Charpentier (2024). Diversification des risques extrêmes. *Risques* 
83. A.Charpentier & E.Gallic (2024). Croissance, décroissance, de quoi parle-t-on? *Risques* 
84. A.Charpentier & L.Barry (2024). Partage des données, à qui profite le crime? *Risques* 
85. A.Charpentier (2023). Est-il nécessaire (et utile) d'être en guerre contre tout? *Risques* 
86. A.Charpentier & N.Marescaux (2023). L'incertitude empêche-t-elle de prendre des décisions? *Risques* 
87. A.Charpentier (2023). La société du "bullshit", *Risques* 
88. A.Charpentier & L.Barry (2023). Ya-t-il une discrimination contre les pauvres? *Risques* 
89. A.Charpentier (2022). Assurance: discrimination, biais et équité. *Institut Louis Bachelier Working Papers*, Opinions & Débats, 25 
90. A.Charpentier (2022). Le risque climatique, une tendance lente de long terme? *Risques* 
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### Practitioners' reports (3)

- 151. O.Côté\*, A.Charpentier & M.P.Côté (2025) A scalable toolbox for exposing indirect discrimination in insurance rates. [CAS Series](#)  
- 152. A.Charpentier & R.Suire (2024). The insurance market in the era of digital transitions: identify the relationships between insurers, BigTech and insurtechs. [SOA Report](#) 
- 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 (28)

- 154. 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](#)
- 155. A.Charpentier & P.Ratz (2025). Linear Risk Sharing on Networks. [doi:10.48550/arXiv.2509.21411](#)
- 156. 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* 
- 157. A.Charpentier (2025). Perceived Fairness in Networks. [doi:10.48550/arXiv.2510.12028](#)
- 158. 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*
- 159. M.El-Idrissi<sup>+</sup>, A.Fernandes Machado\*, E.Gallic & A.Charpentier (2025). Unveil Sources of Uncertainty: Feature Contribution to Conformal Prediction Intervals. [doi:10.48550/arXiv.22505.13118](#)
- 160. 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](#)
- 161. S.Grondin\*, P.Ratz\* & A.Charpentier (2025). Beyond Human Intervention: Algorithmic Collusion through Multi-Agent Learning Strategies. [doi:10.48550/arXiv.2501.16935](#)
- 162. 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](#)
- 163. A.Fernandes-Machado\*, A.Charpentier, E.Flachaire, E.Gallic & F.Hu (2024). Probabilistic Scores of Classifiers, Calibration is not Enough [arXiv:2408.03421](#) 
- 164. A.Fernandes-Machado\*, F.Hu<sup>+</sup>, P.Ratz\*, E.Gallic & A.Charpentier (2024). Geospatial Disparities: A Case Study on Real Estate Prices in Paris. [arXiv:2401.16197](#) 
- 165. A.Fernandes Machado\*, A.Charpentier, E.Flachaire, E.Gallic & F.Hu<sup>+</sup> (2024). From Uncertainty to Precision: Enhancing Binary Classifier Performance through Calibration [arXiv:2402.07790](#) 
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167. F.Hu<sup>+</sup>, P.Ratz<sup>\*</sup> & A.Charpentier (2023). Fairness Explainability using Optimal Transport with Applications in Image Classification [arXiv:2308.11090](#)
168. X.Vamparys<sup>\*</sup> & A.Charpentier (2023). Intelligence artificielle et individualisation des garanties en assurance: échec ou retard à l'allumage? *Chaire PARI WP #32* 
169. F.Hu<sup>+</sup>, P.Ratz<sup>\*</sup> & A.Charpentier (2023). Parametric Fairness with Statistical Guarantees. [arXiv:2310.20508](#)
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171. L.Barry & A.Charpentier (2022). L'équité de l'apprentissage machine en assurance. *Chaire PARI WP #26* 
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173. A.Charpentier, L.Kouakou<sup>\*</sup>, M.Löwe, P.Ratz<sup>\*</sup> & F.Vermet (2021). Collaborative Insurance Sustainability and Network Structure. [arXiv:2103.03635](#)
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180. A.Charpentier (2010) Reinsurance, ruin and solvency issues: some pitfalls [hal:00463381](#) ,
181. A.Charpentier & D.Causeur (2010) Large-scale significance testing of the full Moon effect on deliveries [hal:00482743](#) ,












## Teaching

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### Selected courses

<b>Five Lectures on Fairness and Discrimination in Insurance</b> 	Graduate Lecture VI
Kyoto University 京都大学, Japan 日本	2025
<b>Statistical learning</b> 	STT3030
Université du Québec à Montréal, Canada	2024
<b>Fairness and discrimination in predictive modeling</b> 	MAT998P
Université du Québec à Montréal, Canada	2024

<b>Insurance, biases, discrimination and fairness</b>  	2024
ENSAE-Institut Polytechnique, Saclay, France	
<b>Introduction to data science and artificial intelligence</b>  	INF7100
Université du Québec à Montréal, Canada	2020,2024
<b>Data Science for Actuaries</b>  	ACT6100
Université du Québec à Montréal, Canada	2020
<b>Applied Linear Models</b>  	STT5100
Université du Québec à Montréal, Canada	2018,2019,2020,2021,2022,2023,2025
<b>Statistics</b>  	STT1000 & MAT4681
Université du Québec à Montréal, Canada	2022
<b>Regression</b>	MAT7381
Université du Québec à Montréal, Canada	2020
<b>Non-life insurance mathematics</b>	
ENSAE, Paris, France	2015, 2016, 2017
<b>Networks and flows</b>	
Université de Rennes 1, France	2017
<b>Welfare and inequalities</b>	
Université de Rennes 1, France	2016,2017, 2018
<b>Time Series</b>	MAT8181
Université du Québec à Montréal, Canada	2014
<b>Copulas and Extreme Values</b>	MAT8595
Université du Québec à Montréal, Canada	2014
 <b>YouTube channel</b>	
Courses ~ 75,000 views	2020-2021

## Summer schools

<b>Insurance, biases, discrimination and fairness</b>	2024
Szkoła Nauk Aktuarialnych, Warsaw, Polska	
<b>Econometrics and Machine Learning</b>	2019
Società Italiana di Econometria (SIdE), Italia	
<b>Insurance Data Science: Use and Value of Unusual Data</b>	2019
Summer School of the Swiss Association of Actuaries, Lausanne, Switzerland 	
<b>Econometrics and Machine Learning</b>	2018
Università degli studi dell'Insubria, Varese, Italia	
<b>Econometrics and Machine Learning</b>	2018
Universitat de Barcelona, España	

## Other Institutions

Kyoto University 京都大学	Japan 日本, 2025-2026
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 Appliquées, Angers	France, 2007
INSEA المعهد الوطني للإحصاء والاقتصاد التطبيقي, Rabbat	Morocco المغرب, 2006
Université Saint-Joseph, Beyrut	Lebanon لبنان, 2006
ENSEA, Abidjan	Ivory Coast, 2003

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## Professional training

### **Machine Learning for Actuaries**

*Bermuda Monetary Authority*

Bermuda

2025

### **Data Science for Actuaries**

*Institut des Actuaire*

Paris, France

2015-2018

### **Data Science & Machine Learning for Actuaries**

*AXA Group*

Istanbul, Singapore & Paris

2015

### **Machine Learning for Insurance**

*MAIF Insurance*

Niort, France

2014

### **Natural Catastrophes & Cat Bonds**

*AXA Group*

Paris, France

2007

### **R for Actuarial Science**

*AXA & Caritat (professional training)*

Paris, France

2006-2007