# ARTHUR CHARPENTIER

■ arthur.charpentier@gmail.com | ● 0003-3654-6286 | ♠ freakonometrics

**y** @ freakonometrics | 𝔻 scholar | URL: https://freakonometrics.github.io/

#### Personal

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

# Research Interests

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

#### Bio

### Experience

# Université du Québec à Montréal (UQAM)

Montréal, Canada

since 2018

Full Professor, Mathematics Department

- Member of MSc & PhD Admission Selection Committee
- Member of BSc Supervising committee (in Actuarial Science)
- STT1000, MAT4681, STT5100, ACT6100, INF7100, MAT7381, STT8330, MAT998P
- Quantact Member of the Scientific Committee & Seminar Organisation

#### Université de Rennes >

Rennes, France

since 2017

Full Professor (Professeur des Universités), Faculty of Economics

Member of CREM (UMR 6211 CNRS)

• Currently secondment ("détachement") at UQAM

# **Institut des Actuaires**

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

Assistant Professor (Maître de Conférences), Faculty of Economics

2014-2017

- Member of the faculty board
- 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

#### Université de Montréal

Montréal, Canada 2010-2011

Visiting Professor, Mathematics Department

École Polytechnique

Palaiseau, France

Professeur Chargé de Cours, Economics Department

• Teaching ECO431, ECO550, ECO556, ECO568

2008-2010

#### Université de Rennes >

Rennes, France

Assistant Professor - Maître de Conférences, Faculty of Economics

2007-2010

- Co-director of the Econometrics & Statistics MSc
- Teaching Econometrics, Mathematical Statistics, Insurance Modeling

# École Nationale de la Statistique et d'Analyse de l'Information

Ker Lann, France 2006-2007

ENSAI, Lecturer

• 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 *2001-2002* 

France Assureurs (ex FFA, FFSA), Statistics department

• Publications on Cat Bonds and Insurers Solvency

# AXA General Insurance Hong Kong Limited 安盛保險有限公司 ▶

Hong Kong, China

Pricing and Reserving Actuary

1999-2001

Exane Fixed Income Research Department

Paris, France 1998-1999

#### Education

#### Université de Rennes >

Rennes, France

2016

Habilitation à diriger des recherchesContributions 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), Chaire PARI, 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 ), HumanIA

#### **Previous**

CREM, GERAD, IRT St Exupery-MILA, CREST, École Polytechnique

#### 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

# Fellow of the (French) Institut des Actuaires

Member of the International Actuarial Association (IAA)

Paris, France since 2003

• Member of working groups, anticipate IA impacts, big data, enterprise risk management

# Grants

Financial Grants	
SCOR Foundation ▶ Fairness of predictive models: an application to insurance markets, PI Single (100%) Newsletter #1	300,000€ 2023-2026
Chaire Thélem/ILB Data Science and Insurance Fraud Detection co-PI, with Marie-Pier Côté (50%)	10,000€ 2023
Chaire ACTIONS BNP-Cardif, Institut des Actuaires & l'Institut Louis Bache co-I, PI: Yahia Sahli & Denys Pommeret (5%)	<b>elier</b> tbc 2024-2026
AXA Research Fund   Joint research initiative, PI Single (100%) http://jridata.github.io/	200,000€ 2020-2022
Natural Sciences and Engineering Research Council of Canada (NSERC)  Emerging Infectious Diseases Modelling Initiative (MfPH), Fields Group (2%)	\$3,000,000 2020-2022
MITACS (EY) Insurance and fairness	\$30,000 2021-2022
Natural Sciences and Engineering Research Council of Canada (NSERC)  NSERC-CRSNG, Discovery Grant, PI Single (100%)	\$100,000 2019-2025
Agence Nationale pour la Recherche ORDINEQ project Ordinal and Multivariate Inequalities (5%)	525,000€ 2015-2019
Institut Louis Bachelier  ACTINFO Research Chair, co-PI, with Romuald Élie (50%)	558,000€ 2015-2018
PEPS MoMIS, CNRS co-PI, with Fréderic Giroire (30%)	15,000€ <i>2015</i>
Natural Sciences and Engineering Research Council of Canada (NSERC)  NSERC-CRSNG, Discovery Grant, PI Single (100%)	\$70,000 2012-2014
Institut Louis Bachelier Chaire Groupama-Dauphine, Research Grant (100%)	10,000€ <i>2010</i>
Agence Nationale pour la Recherche AST&Risk Approches spatio-temporelles pour la modélisation du risque (5%)	500,000€ 2008-2012
Institut Louis Bachelier Chaire AXA-ENSAE(100%)	24,000€ 2010
Duties	
Journal, Books & Association Boards	
Canadian Statistical Sciences Institute (CANSSI) ▶ Member of the Board of Directors	Canada 2022-2025
Chapman & Hall/CRC Series in Actuarial Science  Series Editor Board	since 2024
Journal of Risk and Insurance  Senior Editor	since 2022

Annals of Actuarial Science  Guest Editor (Special Issue: Insurance analytics: prediction, explainability and fairs	ness) 2022-2023
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	
NSERC EG 1508  Member of the Mathematics and Statistics (1508) Evaluation Group	Ottawa, Canada since 2022
FRQNT Grants Member of the jury (B1/B2/B3-03E), Master, PhD, Postdocs	Québec, Canada 2019-2023
Faculty of Science, UQAM  Member of the Research Committee	Montréal, Canada 2018-2024
MSc Program in Mathematics, UQAM  Member of the supervising committee	Montréal, Canada since 2021
Bachelor Program in Actuarial Science, UQAM  Member of the supervising committee	Montréal, Canada 2018-2021
Conseil de Faculté, Université de Rennes	Rennes, France
Member of the faculty board	2016-2018
Member of the faculty board  France Stratégie - Cabinet du Premier Ministre  Membre du groupe de travail sur la mutualisation des risques climatiques	· ·
France Stratégie - Cabinet du Premier Ministre Membre du groupe de travail sur la mutualisation des risques climatiques HCÉRES	2016-2018 Paris, France
France Stratégie - Cabinet du Premier Ministre  Membre du groupe de travail sur la mutualisation des risques climatiques	2016-2018 Paris, France 2024
France Stratégie - Cabinet du Premier Ministre  Membre du groupe de travail sur la mutualisation des risques climatiques  HCÉRES  Haut Conseil de l'évaluation de la recherche et de l'enseignement supérieur	2016-2018 Paris, France 2024 Paris, France
France Stratégie - Cabinet du Premier Ministre  Membre du groupe de travail sur la mutualisation des risques climatiques  HCÉRES  Haut Conseil de l'évaluation de la recherche et de l'enseignement supérieur  Evalution committee president	2016-2018 Paris, France 2024 Paris, France
France Stratégie - Cabinet du Premier Ministre  Membre du groupe de travail sur la mutualisation des risques climatiques  HCÉRES  Haut Conseil de l'évaluation de la recherche et de l'enseignement supérieur Evalution committee president  Data & Code  Insurance Pricing Game	2016-2018 Paris, France 2024 Paris, France 2020  AICrowd 2020-2021 R
France Stratégie - Cabinet du Premier Ministre  Membre du groupe de travail sur la mutualisation des risques climatiques  HCÉRES  Haut Conseil de l'évaluation de la recherche et de l'enseignement supérieur  Evalution committee president  Data & Code  Insurance Pricing Game  http://pricing-game.com/ with A. Farzanehfar & F. Houssiau (Imperial College)  CASDataset 1.0-11	2016-2018 Paris, France 2024 Paris, France 2020  AICrowd 2020-2021 R
France Stratégie - Cabinet du Premier Ministre  Membre du groupe de travail sur la mutualisation des risques climatiques  HCÉRES  Haut Conseil de l'évaluation de la recherche et de l'enseignement supérieur  Evalution committee president  Data & Code  Insurance Pricing Game  http://pricing-game.com/ with A. Farzanehfar & F. Houssiau (Imperial College)  CASDataset 1.0-11  http://cas.uqam.ca/ R package  with C. Dutang (ENSIMAG, Grenoble, France)	2016-2018 Paris, France 2024 Paris, France 2020  AICrowd 2020-2021 R
France Stratégie - Cabinet du Premier Ministre  Membre du groupe de travail sur la mutualisation des risques climatiques  HCÉRES  Haut Conseil de l'évaluation de la recherche et de l'enseignement supérieur  Evalution committee president  Data & Code  Insurance Pricing Game  http://pricing-game.com/ with A. Farzanehfar & F. Houssiau (Imperial College)  CASDataset 1.0-11  http://cas.uqam.ca/ R package  with C. Dutang (ENSIMAG, Grenoble, France)  Dissemination  Mastodon account  @freakonometrics@mastodon.social	2016-2018 Paris, France 2024 Paris, France 2020  AICrowd 2020-2021  R since 2015
France Stratégie - Cabinet du Premier Ministre  Membre du groupe de travail sur la mutualisation des risques climatiques  HCÉRES  Haut Conseil de l'évaluation de la recherche et de l'enseignement supérieur  Evalution committee president  Data & Code  Insurance Pricing Game  http://pricing-game.com/ with A. Farzanehfar & F. Houssiau (Imperial College)  CASDataset 1.0-11  http://cas.uqam.ca/ R package  with C. Dutang (ENSIMAG, Grenoble, France)  Dissemination  Mastodon account  @freakonometrics@mastodon.social  Scientific dissemination, ~ 3,600 followers  Twitter account  @freakonometrics	2016-2018 Paris, France 2024 Paris, France 2020  AICrowd 2020-2021  R since 2015

• Rapport Langreney : lutter contre le désengagement des assureurs dans la	Dalloz Actualité 2022
	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 F	
<ul> <li>Peut-on vraiment prévoir la probabilité de gagner une élection présidentielle ?</li> </ul>	La Tribune 2017
• Le casino des catastrophes	La Revue Dessinée 2016
<ul> <li>How social media usage does and does not predict protests</li> </ul>	Washington Post, 2015
<ul> <li>You can vote twice! The many political appeals of proxy votes in France see https://freakonometrics.github.io/dissemination/for more details</li> </ul>	Washington Post, 2014
Interviews	
• IA et assurance ♀ La Le	ttre de l'Assurance 2024
<ul> <li>Assurances : des collectivités désemparées face aux effets du dérèglement clima</li> </ul>	tique 囯 Politis 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 climatiqu	e 🎐 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 ?	Es Echos 2018
• Les risques en économie : le mécanisme de l'assurance 🕒 💮 It's th	e Economy, Stupid 2018
Opinion columns	. 11
• Ni les assureurs ni les gouvernements ne sont préparés à l'augmentation expon	lentielleLe Monde 2023
Selected expertise	
colocida out of the	
International Monetary Fund (IMF) Assessing Central Bank Solvency	Washington DC, US 2021
International Monetary Fund (IMF)	2021
International Monetary Fund (IMF)  Assessing Central Bank Solvency  International Fund for Agricultural Development (IFAD) United Na	2021 tions Roma, Italy 2020-2021
International Monetary Fund (IMF) Assessing Central Bank Solvency International Fund for Agricultural Development (IFAD) United Na NLP and Topic Modeling	2021 <b>tions</b> Roma, Italy
International Monetary Fund (IMF) Assessing Central Bank Solvency International Fund for Agricultural Development (IFAD) United Na NLP and Topic Modeling HMG Finance	2021 tions Roma, Italy 2020-2021 Paris, France
International Monetary Fund (IMF) Assessing Central Bank Solvency International Fund for Agricultural Development (IFAD) United Na NLP and Topic Modeling HMG Finance First-In First-Out (FIFO) vs Last-In First-Out (LIFO), perpertual rents	2021 tions Roma, Italy 2020-2021 Paris, France
International Monetary Fund (IMF) Assessing Central Bank Solvency International Fund for Agricultural Development (IFAD) United Na NLP and Topic Modeling HMG Finance First-In First-Out (FIFO) vs Last-In First-Out (LIFO), perpertual rents Academic activities	2021 tions Roma, Italy 2020-2021 Paris, France
International Monetary Fund (IMF) Assessing Central Bank Solvency International Fund for Agricultural Development (IFAD) United Na NLP and Topic Modeling HMG Finance First-In First-Out (FIFO) vs Last-In First-Out (LIFO), perpertual rents Academic activities  Recent conferences organization 2nd Workshop of Fairness and Discrimination in Insurance	tions Roma, Italy 2020-2021 Paris, France 2012  Québec, Canada
International Monetary Fund (IMF) Assessing Central Bank Solvency International Fund for Agricultural Development (IFAD) United Na NLP and Topic Modeling HMG Finance First-In First-Out (FIFO) vs Last-In First-Out (LIFO), perpertual rents Academic activities  Recent conferences organization  2nd Workshop of Fairness and Discrimination in Insurance with MP. Coté (scientific & organization committee)  5th Insurance Data Science conference	tions Roma, Italy 2020-2021 Paris, France 2012  Québec, Canada 2024 Stockholm, Sweden
International Monetary Fund (IMF) Assessing Central Bank Solvency International Fund for Agricultural Development (IFAD) United Na NLP and Topic Modeling HMG Finance First-In First-Out (FIFO) vs Last-In First-Out (LIFO), perpertual rents Academic activities  Recent conferences organization  2nd Workshop of Fairness and Discrimination in Insurance with MP. Coté (scientific & organization committee)  5th Insurance Data Science conference (scientific committee) Networks, Games and Risk	tions Roma, Italy 2020-2021 Paris, France 2012  Québec, Canada 2024 Stockholm, Sweden 2024 Montréal, Canada
International Monetary Fund (IMF) Assessing Central Bank Solvency International Fund for Agricultural Development (IFAD) United Na NLP and Topic Modeling HMG Finance First-In First-Out (FIFO) vs Last-In First-Out (LIFO), perpertual rents Academic activities  Recent conferences organization  2nd Workshop of Fairness and Discrimination in Insurance with MP. Coté (scientific & organization committee) ▶  5th Insurance Data Science conference (scientific committee) ▶  Networks, Games and Risk with M. Ghossoub (scientific & organization committee) ▶  5th Insurance Data Science conference (scientific committee) ▶	tions Roma, Italy 2020-2021 Paris, France 2012  Québec, Canada 2024  Stockholm, Sweden 2024  Montréal, Canada 2023  London, UK 2023
International Monetary Fund (IMF)  Assessing Central Bank Solvency  International Fund for Agricultural Development (IFAD) United Na NLP and Topic Modeling  HMG Finance  First-In First-Out (FIFO) vs Last-In First-Out (LIFO), perpertual rents  Academic activities  Recent conferences organization  2nd Workshop of Fairness and Discrimination in Insurance with MP. Coté (scientific & organization committee) >  5th Insurance Data Science conference (scientific committee) >  Networks, Games and Risk with M. Ghossoub (scientific & organization committee) >  5th Insurance Data Science conference	tions Roma, Italy 2020-2021 Paris, France 2012  Québec, Canada 2024 Stockholm, Sweden 2024 Montréal, Canada 2023 London, UK

Association for the Development of Research in Economics Annual Doctoral Conference of ADRES (scientific committee)	s and Statistics Paris, France 2022-2023
Workshop of Fairness and Discrimination in Insurance with MP. Coté (scientific & organization committee)	Québec, Canada 2022
Emerging Insights in Insurance Statistics & with E. Valdez, J. Cao & H. Jeong (scientific & organization committee	BIRS, Banff, Canada
MLISTRAL Machine Learning in Insurance, CIRM (scientific committee)	Marseille, France 2022
<b>4th Insurance Data Science conference</b> (scientific committee)	Milano, Italy 2022
Journées de la Statistique SFdS (Société Française de Statistique) Annual Meeting (scientific com	Lyon, France <i>2022</i>
3rd Insurance Data Science conference with M. Gesmann, S. Pesenti & A. Tsanakas (scientific & organization	online committee) > 2021
<b>36th Meeting of the Canadian Econometric Study Group</b> <i>Machine Learning Econometrics, at UQAM (scientific committee)</i>	Montréal, Canada 2019
Atlantic Causal Inference Conference 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
Workshop on data science for actuarial applications ACTINFO Chair, with Chairs at University CB Lyon (ISFA)	Paris, France 2018
Workshop on multivariate inequalities  ANR Ordineq, with O. L'Haridon & B. Taroux	Rennes, France 2018
5th R in Insurance conference (scientific committee) ▶	Paris, France 2017
Selected presentations at conferences	
Canadian Econometrics Study Group (CESG)  tbc (invited speaker)	Toronto, Canada 2024
Optimization Days  Market Pricing with Reinforcement Learning	Montréal, Canada 2024
Colloque l'assurance face à ses ruptures (CCIC) tbc (invited speaker)	Cerisy, France 2024
Workshop on decentralized insurance and risk sharing Collaborative insurance, unfairness and discrimination (invited speak	Chicago, IL, US
27th International Congress on Insurance: Mathematics 8	
Optimal transport and Wasserstein barycenter for algorithmic fairness	Economics Chicago, IL, US
	Economics Chicago, IL, US
Optimal Transport Workshop Institut d'Etudes Scien	Economics Chicago, IL, US 2024 attifiques (IES), Cargèse, France 2024 Nîmes, France
Optimal Transport Workshop Institut d'Etudes Scien Optimal transport for fairness (invited)  Journée d'étude sur le blanchiment et la fraude	Economics Chicago, IL, US 2024 attifiques (IES), Cargèse, France 2024 Nîmes, France

Actuarial Science Workshop, SSC Annual Conference Optimal transport for fairness, in insurance (invited speaker)	ce Carleton Univ., Ottawa, Canada 2023
Foundations and Applications of Decentralized Risk Risk sharing on irregular networks (invited speaker)	KU Leuven, Belgium 2023
<b>16th Annual Conference of Thailand Econometric S</b> <i>Quantifying discrimination and fairness in predictive models (</i>	•
6th International Econometric Conference of Vietna Causal inference with optimal transport (invited speaker)	am Thành phố Hồ Chí Minh, Vietnam 2023
Montréal AI Symposium (MAIS2022) Insurance, fairness and discrimination	Montréal, Canada 2022
Workshop on Impacts of Climate Change Catastrophic risks and insurance (invited speaker)	Fields Institute, Toronto, Canada 2022
Deutsche Gesellschaft für Versicherungs- und Finan A fair pricing model via adversarial learning (invited speaker)	•
<b>20 ans du Master d'Actuariat</b> Climate risk and insurance fairness (invited speaker)	Universtié Dauphine, Paris 2022
Simulation & IA 2022 Simulations and risk (keynote)	Cargèse, Universita di Corsica, France 2022
Actuarial Sciences and Applications Fairness in insurance pricing (keynote)	CIRM, Luminy, France 2022
CMStatistics Modeling Joint Lives within Families (invited speaker)	King's College, London, UK 2021
Emeritaat Jan Beirlant Extended Pareto distribution and applications (invited speaker	Leuven, Belgium 2021
Justice sociale, l'équité et les discriminations dans l'Assurance et discrimination (invited speaker)	les systèmes algorithmiques CNRS 2021
IAA (International Actuarial Association) Online Journal Individual risks and collective decisions (invited speaker)	int Section Colloquium 2021
<b>Risque et Incertitude</b> Risque de pandémie, pertes d'exploitation et incertitudes	Institut Universitaire de France (IUF) 2021
<b>5e Conférence annuelle PANORisk</b> Autocalibration and Insurance Pricing (invited speaker)	Le Mans, France 2021
SSC (Statistical Society of Canada) Annual Conferent Autocalibration & Premium Calculations (invited session)	nce Canada 2021
IME (Insurance: Mathematics & Economics) Annual Conference Champaign, Illinois, US  Autocalibration & Premium Calculations □ (and panel discussion □) 2021	
ASTIN Annual Conference Autocalibration & Premium Calculations	Orlando, Florida, US <i>2021</i>
MODCOV19-CNRS Modèles épidémiologiques pour analyse coût-efficacité sous inc	Paris, France ertitude (invited speaker) 2020
Machine learning for economists and applied social Machine Learning in Actuarial Science & Insurance (plenary s	
Actuarial and Financial Mathematics Conference Insurance Pricing in Competitive Markets (invited speaker)	Brussels, Belgium 2020

Online International Conference in Actuarial science and finance  Modeling Joint Lives within Families	Lyon, France 2020
Risk Analytics Conference  Actuarial Pricing and Competition, University of Illinois (keynote speaker)	Chicago, US 2019
UCSB InsurTech Summit Insurance Pricing in Competitive Markets (invited speaker)	Santa Barbara, US 2019
Natural Catastrophe Economics Workshop  Assessing Probabilities with Climate Change (invited speaker)	Zürich, Switzerland 2019
XXVIIIth International Biometric Conference Collaborative Genealogical Data in Demography (invited session)	Barcelona, Spain 2018
European R Users Meeting • Collaborative Genealogical Data in Demography (invited speaker)	Budapest, Hungary 2018
Ecole Thématique sur l'Evaluation des Politiques Publiques  Evaluation du prejudice corporel en assurance automobile (invited speaker)	Aussois, France 2018
Big data empirics and policy analysis  Insurance: Risk Pooling or Price Segmentation (keynote speaker)  Bank of Insurance: Risk Pooling or Price Segmentation (keynote speaker)	England, London, UK 2017
Artificial Intelligence for fintech and insurtech Insurance Pricing and Competition (invited speaker)	IHP, Paris, France 2017
New challenges in the measurement of economic inequalities  Extended Pareto Models and Incomes (invited speaker)	Marseille, France 2017
Cartostats Université La Ville en Économie (invited speaker)	Paris Diderot, France 2017
Dependence Modelling with Applications in Finance and Insurance Insurance Pricing and Competition (invited speaker)	Athens, Greece 2017
Comprendre et Anticiper la Révolution du Numérique en Assurance Assurance et Responsabilité (invited speaker)	Caen, France
Statistical Learning and Data Science Erasmus University, Roquantiles and Expectiles (invited speaker)	tterdam, Netherlands 2017
Sciences XXL Collaborative Data in Genealogy (invited speaker)	INED, Paris, France 2017
3rd International MACroeconomics workshop (IMAC) From Micro to Macro (invited speaker)	Rennes, France 2016
Ordinal and Multidimensional Inequalities Pareto Models and Incomes (invited speaker)	Montpelier, France 2016
<b>Droit des données personnelles</b> Assurance & RGPD (règlement général sur la protection des données) (invited spec	Amiens, France aker) 2016
3rd EAJ Conference (European Actuarial Journal) Big Data and Insurance (invited speaker)	Lyon, France 2016
International Conference on Applied Business and Economics Natural Catastrophes and Government Intervention	Nanterre, France 2016
Big Data : la recherche s'expose Big Data and Insurance (invited speaker)	Paris, France 2016
Centre for Central Banking Studies  Big Data and Insurance (keynote speaker)  Bank of I	England, London, UK 2016

Asociación Española de Gerencia de Riesgos y Seguros  Machine Learning and Insurance (keynote speaker)	Barcelona, Spain 2016
Big Data & Environment Impact of time Granularity on Statistical Modeling (invited speaker)	Buenos Aires, Argentina 2015
IA   BE Summer School Machine Learning and Insurance (keynote speaker)	Louvain, Belgium 2015
ACP meeting Big and Small Data in Insurance (invited speaker)	Leuven, Belgium 2015
Journées de Statistiques Probit transformation for nonparametric kernel estimation of the copula der	Lille, France asity 2015
<b>22nd International Forecasting Financial Markets Conference</b> <i>Copulas and Finance</i>	Rennes, France 2015
Insurance & Finance Colloquium Risk Measures and Pareto Models	Le Mans, France 2015
R in Insurance Conference Getting into Bayesian Wizardry with the eyes of a muggle actuary (keynot	London, UK te speaker) 2014
SSC annual conference Risk Measures and Pareto Models (invited session)	Toronto, Canada 2014
Mathematical Finance Days Risk Measures and Pareto Models	HEC Montréal, Canada 2014
World Social Science Forum (UNESCO) Academic Blogging (invited session)	Montréal, Canada 2013
Mathematical Finance Days  Quantiles Estimation from Heavy Tailed Distribution	HEC Montréal, Canada 2013
6th R/Rmetrics Summer School on Computational Finance Actuarial Science with R (invited speaker)	Meielisalp, Switzerland 2012
Journées de la Société Canadienne de Sciences Économiques Modeling dynamic incentives an application to basketball	Mont Tremblant, Canada 2012
Québec-Ontario Workshop on Insurance Mathematics Quantiles Estimation from Heavy Tailed Distribution	Montréal, Canada 2012
Mathematical Finance Days Fast Computations on Binomial Trees	HEC Montréal, Canada 2012
Journées de la Société canadienne de sciences économiques Insurance of Natural Catastrophes When Should Government Intervene ?	Sherbrooke, Canada 2011
Changement climatique et gestion des risques  Modeling heat-waves: return period for non-stationary extremes	Lyon, France 2011
Journées d'Etudes Statistique Copulas, Insurance and Risk Measures (invited speaker)	Luminy, France 2010
IA-Lyon Summer School Solvency II' newspeak 'one year uncertainty for IBNR': the boostrap approach	Lyon, France 2010
Financial Risks International Forum Multiple Risk Measures	Paris, France 2010
Assessment and Mitigation of Emerging Risks  Emerging risks: an actuarial perspective	Paris, France 2009

R.I.S.K. Symposium

Incertitude des régimes des retraites

Workshop Finance & Insurance

Estimation of quantile related risk measures (invited speaker)

Workshop on Actuarial Science

Belo Horizonte, Brazil

IBNR and quantification of uncertainty

Paris, France

2009

Sao Paulo, Brazil

2009

Workshop on Actuarial Science

Belo Horizonte, Brazil

2009

7th International Workshop on Rare Event Simulation (RESIM)

Optimal Reinsurance with ruin probability target

2008

Selected talks at academic seminars

Københavns Universitet	Copenhagen, Denmark, 2024
Séminaire de modélisation financière de Paris, Université Paris Sorbonne	-
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 Intel	lligence 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 U	rbana-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, 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 Incertitud	les) 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, Italy, 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, Netherlands, 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, Netherlands, 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
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 seminars
Workshop on Trustryouthy AI

Workshop on Trustworthy AI Insurance, discrimination and fairness	Montréal, Canada 2024
Actuarial Contact Program, ACP – KUL From contemplative to predictive modeling in actuarial science and risk manage	Leuven, Belgium 2024
Groupe de Travail 'Mutualisation des risques', France Stratégie Member of group, various participations and presentations	Paris, France 2024
Scope and limits of artificial intelligence	Paris, France (online) 2024
TD General Insurance Pricing Seminar Fairness and Ethics in Actuarial Pricing	Montréal, Canada 2024
Akur8 Technical Seminar Ethics in Actuarial Pricing, and equipy	Paris, France (online) 2024
Chaire Thélem / ILB Fairness and Ethics in Actuarial Pricing	Orléans, France 2024
Data Talk Generali Fairness and Ethics in Actuarial Pricing	Paris, France 2024
Colloque Actuariat Francophone La mutualisation et l'inclusion à l'épreuve de la segmentation (invited speaker)	Paris, France 2023
TD Insurance Data Analytics Seminar Fairness and Ethics in Actuarial Pricing	Montréal, Canada 2023
Intact Seminar Causal Models for Discrimination in Insurance	Montréal, Canada 2023
Akur8 Pricing Seminar Fairness and Ethics in Actuarial Pricing	Paris, France 2023
Conference Data Science Institute Les enjeux des risques climatiques en assurance de dommages	Montréal, Canada 2023
Table ronde sur la pratique actuarielle, AG2R Perspective de la pratique actuarielle	Paris, France 2023
3e Colloque International de l'Actuariat Francophone La mutualisation et l'inclusion à l'épreuve de la segmentation	Paris, France 2023
Journée d'étude Alvidence Machine Learning with Fairness Contraints	Paris, France 2023
Data Science Webinar, Institut du Risk Management  Machine Learning with Fairness Contraints	Paris, France 2023
Service Juridique France Assureurs Insurance & 'high-risk' AI systems - EU AI Act	Paris, France 2023
Comité Corporel de France Assureurs To Sue or not to Sue	Paris, France 2023
Colloque SCOR-Institut des Actuaires Assurance collaborative, théorie des graphes et actuariat	Paris, France 2022
Beneva (La Capitale & SSQ Assurance) Competitions in insurance markets	Québec, Canada 2022

Paris, France 2022
Paris, France 2022
Paris, France 2022
Niort, France 2022
Washington, DC, USA 2022
Paris, France 2022
Paris, France 2022
Paris, France 2022
Ottawa, Canada 2022
Paris, France 2022
Montréal, Canada 2022
Paris, France 2022
Paris, France 2022
Paris, France 2021
Paris, France 2021
Montréal, Canada 2020
Paris, France 2019
Beaune, France 2018
Paris, France 2018
Paris, France 2016
Paris, France 2015
Chicago, IL, US 2013

## **Desjardins Reserving Seminar**

One-year uncertainty

**Milliman Reserving Seminar** 

One-year uncertainty

Montréal, Canada 2011 Paris, France

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 – 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, 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; Information Sciences; Finance Research Letters; Neurocomputing; Management Science

**Conferences / Program Committee (PC) member** 

**ECML-PKDD** 

**Books** 

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

Tenure review

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

**Grants review** 

ANR (Agence Nationale pour la Recherche, France), AXA Research Fund, FNR Luxembourg CORE program (Luxembourg), FRQNT (Fonds de Recherche du Québec - Nature & Technologie, Canada), 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 (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) 2019-3023 FQRNT (Quebec) Canada Mathematics and Statistics Evaluation Group (EG 1508) 2022-2025 NSERC (Canada)

Selected research visits and invitations (> 1 week)

University of CaliforniaSanta Barbara, CA, USvisiting Mike Ludkovski2019Universitat de BarcelonaBarcelona, Spainvisiting Montserrat Guillen2018Università degli Studi dell'InsubriaVarese, Italyvisiting Raffaello Seri2018

Harvard UniversityCambridge, USvisiting Christine Choirat & Pierre Jacob2017

Universitat de BarcelonaBarcelona, Spainvisiting Montserrat Guillen2016

Centro de Investigación en Matemáticas

visiting Victor Rivero

Guanajuato, Mexico

2014

Universidade Federal de Minas Gerais

visiting Renato Assunção

Belo Horizonte, Brazil

2013

Raphaël Suire

Université de Nantes, France 2024

Fei Huang

UNSW, Sydney, Australia, 2024

Laurence Barry

Chaire PARI, 2024

Stéphane Loisel

CNAM Paris, France, 2024

Mario GhossoubWaterloo University, Canada, 2022, 2023Ewen GallicUniversité Aix-Marseille, France, 2023-2024Jean-Michel LoubesUniversité Paul Sabatier, Toulouse, France, 2022Andreaa Enache ( ₭ Covid-19)Stockholm School of Economics, Sweden, 2020-2021

# Master students (since 2015)

Noé Bosc-Haddad in Ecole Centrale, Paris, France, 2024
Aña María Patrón Piñerez in Universidad de los Andes, Colombia, 2024
Julien Siharath in Université de Rennes, France, 2024
Florent Crouzet École Polytechnique, France, 2024
Suzie Grondin in ENSAE, Paris, France, 2023
Gaspard Ichas ENSAI, Rennes, France, 2023
Nathan Herzhaft in École Polytechnique, France, 2023

Kim Anh Lê in	Ludwig Maximilian University of Munich, Germany, 202	
Olivier Côté 🛅 🜍	(co-supervision) Université Laval, Québec, Canada, 2023	
Martin de Closets in	École Polytechnique, France, 202	
Franklin Feukam Kouhoue	in (Prix des Sciences du Risque Optimind) ENSAE, Paris, France, 202	
Rawanda Matar in	UQAM, Canada, 202	
Menna Hassan in	(co-supervision) American University, Cairo, Egypt, 202	
Thomas Carpentier in	Université de Lyon, France, 202	
Lariosse Kouakou in	Université de Brest, France, 202	
Elie Odin	ENS (École Normale Supérieure) Ker Lann, France, 202	
Apollinaire Barme in	ENSAE, Paris, France, 201	
Molly James in	Université de Brest, France, 201	
Enora Belz in	Université de Rennes, France, 201	
Clothilde Davesne in	ENSAE, Paris, France, 201	
Julie Viard in	Université de Rennes, France, 201	
Agathe Fernandes Mad	L _ 4 _	
•	hado  co-supervised with E. Gallic  2023-tode	
Fairness and causal models, Olivier Côté	co-supervised with E. Gallic 2023-tode	
Fairness and causal models, Olivier Côté Predictive Models, Interpret Hongda Hu	co-supervised with E. Gallic 2023-toda b	
Fairness and causal models, Olivier Côté Predictive Models, Interpret Hongda Hu Bandits and risks, co-super Samuel Stocksieker	co-supervised with E. Gallic  2023-tode  ability and Explainability, co-supervised with M.P. Côté (Laval)  2023-tode  2023-tode	
Fairness and causal models, Olivier Côté Predictive Models, Interpret Hongda Hu Bandits and risks, co-super Samuel Stocksieker	co-supervised with E. Gallic  ability and Explainability, co-supervised with M.P. Côté (Laval)  ability and Explainability, co-supervised with M.P. Côté (Laval)  bilities with M. Ghossoub & A. Schied (Waterloo)  ability and Explainability, co-supervised with M.P. Côté (Laval)  2023-tode  ability and Explainability, co-supervised with M.P. Côté (Laval)  2020-tode  ability and Explainability, co-supervised with M.P. Côté (Laval)  2020-tode  ability and Explainability, co-supervised with M.P. Côté (Laval)  2023-tode  ability and Explainability, co-supervised with M.P. Côté (Laval)  2020-tode  ability and Explainability, co-supervised with M.P. Côté (Laval)  2020-tode  ability and Explainability, co-supervised with M.P. Côté (Laval)  2020-tode  ability and Explainability, co-supervised with M.P. Côté (Laval)  2020-tode  ability and Explainability, co-supervised with M.P. Côté (Laval)  2020-tode  ability and Explainability, co-supervised with M.P. Côté (Laval)  2020-tode  ability and Explainability, co-supervised with M.P. Côté (Laval)	
Fairness and causal models, Olivier Côté Predictive Models, Interpret Hongda Hu Bandits and risks, co-super Samuel Stocksieker Unbalanced Data, co-super Philipp Ratz	co-supervised with E. Gallic  ability and Explainability, co-supervised with M.P. Côté (Laval)  prised with M. Ghossoub & A. Schied (Waterloo)  prised with D. Pommeret (Université de Lyon)  con and Games  2023-tode  2020-tode  2020-tode  2020-tode  2020-tode  2021-202  10 in (2020-202)  2021-202  2021-202	
Fairness and causal models, Olivier Côté Predictive Models, Interpret Hongda Hu Bandits and risks, co-super Samuel Stocksieker Unbalanced Data, co-super Philipp Ratz Constraints in Fair Estimat Enora Belz Etude de données agrégées d	co-supervised with E. Gallic  ability and Explainability, co-supervised with M.P. Côté (Laval)  prised with M. Ghossoub & A. Schied (Waterloo)  prised with D. Pommeret (Université de Lyon)  con and Games  2023-tode  2020-tode  2020-tode  2020-tode  2020-tode  2021-202  10 in (2020-202)  2021-202  2021-202	

# PhD Students invitations

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)

2013-2019

Régression expectile pour données longitudinales, co-supervised with K. Oualkacha

Post-doctoral supervision (2 ongoing, 5 completed)

#### **Arsene-Brice Zotsa Ngoufack**

Generative models, co-supervised with H. Guérin

(exp) 2024-2025

Marouane Il-Idrissi

Interpretability and fairness, co-supervised with M.P. Côté

(exp) 2024-2026

François Hu

**Ewen Gallic** 

now Milliman R&D, in [7]

Fairness, co-supervised with M. Moralès

2022-2024

Félix Foutel Rodier

now Oxford University, (D)

Mathematical models for pandemics, co-supervised with H. Guérin

2021-2022

**Amirouche Benchallal** 

now Natural Resources Canada in

2021-2022

Extracting information from satellite pictures, with Y. Bouroubi

now Aix-Marseille Univ. (AMSE) in

Extracting information from collaborative genealogical data

2017-2018

**Arnaud Goussebaïle** 

now ETH Zürich D in

*Insurance* and prevention of natural catastrophes

2016-2017

Jury (PhD & Habilitation à Diriger des Recherches)

Christophe Dutang (Université Paris Dauphine); Nabil Kazi-Tani (Université de Lyon)

Marouane Il Idriss (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)

Jury (MSc)

Mélanie Raymond, Jordi Rolls Teikeu Jatsa, Francis Duval, Roxane Turcotte, Olivier Binette, Julie Bélanger, Alexandre Roy-Gaumond, Paul Mathivon

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

#### Recruiting committees

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 3000 citations (**G**, June 2024), 45 published papers in peer reviewed journals, 7 published papers in peer reviewed international conferences, 7 books, 49 papers in French (including dissemination papers), 16 chapters in textbooks, and 26 working papers.

### Published papers in peer reviewed journals (45)

- 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*, soon arXiv:2308.02966
- 2. M.Moriah\*, F.Vermet & A.Charpentier (2024). Measuring and Mitigating Biases in Motor Insurance Pricing. *European Actuarial Journal*, soon arXiv:2311.11900
- 3. L.Barry & A.Charpentier (2023). Melting Contestation: Insurance Fairness and Machine Learning, *Ethics and Information Technology* 10.1007/s10676-023-09720-y
- 4. A.Barry $^*$ , K.Oualkacha & A.Charpentier (2023). Alternative fixed-effects panel model using weighted asymmetric least squares regression, *Statistical Methods & Applications* 10.1007/s10260-023-00692-3
- 5. L.Barry & A.Charpentier (2022) L'équité de l'apprentissage machine en assurance. *Statistiques & Société*,
- 6. A.Charpentier & E.Flachaire (2022). Oaxaca-Blinder decomposition of changes in means and inequality: A simultaneous approach, *Economics Bulletin*, to appear,
- 7. R.Bigot, A.Cayol & A.Charpentier (2022) Risque de pandémie, pertes d'exploitation et incertitudes des garanties assurantielles. *Revue Responsabilité civile et Assurances*
- 8. A.Charpentier & E.Flachaire (2022). Pareto Models for Top Incomes and Wealth. *Journal of Economic Inequality*, **20** doi:10.1007/s10888-021-09514-6 .
- 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
- A.Charpentier, M.Denuit & J.Trufin (2021). Autocalibration and Tweedie-dominance for Insurance Pricing with Machine Learning. *Insurance: Mathematics and Economics*, 101, 485–497, 10.1016/j.insmatheco.2021.09.001

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

- 11. 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
- 12. A.Charpentier, R.Élie & C.Remlinger\* (2021) Reinforcement Learning in Economics and Finance. *Computational Economics*, doi:10.1007/s10614-021-10119-4
- 13. 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
- 14. 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
- 15. A.Charpentier, R.Élie, M.Laurière<sup>+</sup>& V.C.Tran (2020) COVID-19 pandemic control: balancing detection policy and lockdown intervention under ICU sustainability. *Mathematical Modelelling of Natural Phenomena* doi:10.1051/mmnp/2020045
- 16. L.Barry & A.Charpentier (2020) Personalization as a Promise: Can Big Data Change the Practice of Insurance?. *Big Data & Society*. doi:10.1177/2053951720935143
- 17. A.Charpentier & E.Gallic<sup>+</sup> (2020) Can historical demography benefit from the collaborative data of genealogy websites?. *Population*, doi:10.3917/popu.2002.0391
- 18. A.Charpentier & E.Gallic<sup>+</sup>(2019) Using collaborative genealogy data to study migration: a research note. *The History of the Family*, doi:10.1080/1081602X.2019.1641130, poster
- 19. A.Charpentier, N.Ka\*, SMussard & O.H. Ndiaye (2019) Gini Regressions and Heteroskedasticity. *Econometrics*, 7, doi:10.3390/econometrics7010004
- 20. A.Charpentier, E.Flachaire & A.Ly\*(2018) Econometrics and Machine Learning. *Economics & Statistics*, doi:10.24187/ecostat.2018.505d.1970
- 21. 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 •
- 22. A.Charpentier, A David\*& R.Élie (2017) Optimal Claiming Strategies in Bonus Malus Systems and Implied Markov Chains. *Risks*, doi:10.3390/risks5040058
- 23. A.Charpentier & M.Pigeon (2016) Macro vs. Micro Methods in Non-Life Claims Reserving (an Econometric Perspective). *Risks*, 4: 1-18, doi:10.3390/risks4020012
- 24. G.Geenens, A.Charpentier & D.Paindaveine (2017) Probit transformation for nonparametric kernel estimation of the copula density. *Bernoulli* doi:10.3150/15-BEJ798
- 25. 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
- 26. 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
- 27. A.Charpentier & E.Flachaire (2015) Log-transform kernel density estimation of income distribution. *L'Actualité Economique*, 91 :141-149, doi:10.7202/1036917ar
- 28. 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

- 29. 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
- 30. 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
- 31. A.Charpentier, M.Durand\*(2015) Modeling earthquake dynamics. *Journal of Seismology*, 19: 721-739, doi:10.1007/s10950-015-9489-9
- 32. 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
- 33. A.Charpentier & S.Mussard (2011) Income Inequality Games. *Journal of Economic Inequality*, 9: 529–554, 20 doi:10.1007/s10888-011-9184-1
- 34. A.Charpentier (2011) On the return period of the 2003 heat wave. *Climatic Change*, 109: 245–260, doi:10.1007/s10584-010-9944-0
- 35. 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
- 36. 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
- 37. 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
- 38. A.Charpentier & D. Sibaï\*(2009) Dynamic flood modeling: combining Hurst and Gumbel's approach. *Environmetrics*, 20: 32–52, doi:10.1002/env.909
- 39. A.Charpentier (2008) Insurability of climate risks. *The Geneva Papers on Risk and Insurance*, 33: 91–109, doi:10.1057/palgrave.gpp.2510155
- 40. A.Charpentier (2008) Dynamic dependence ordering for Archimedean copulas and distorted copulas. *Kybernetika*, doi:10338.dmlcz/135890
- 41. A.Charpentier & J.Segers (2008) Convergence of Archimedean copulas. *Statistics and Probability Letters*, doi:10.1016/j.spl.2007.07.014
- 42. 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
- 43. 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
- 44. 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
- 45. 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

# Published papers in peer reviewed conferences (7)

- 46. 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'24) *IEEE World Congress on Computational Intelligence* (IEEE WCCI 2024) arXiv:2403.15790
- 47. 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), arXiv:2309.06627, equipy package ♣, ▶ and poster ♣
- 48. A.Charpentier, F.Hu<sup>+</sup>, & P.Ratz<sup>\*</sup> (2023) Mitigating Discrimination in Insurance with Wasserstein Barycenters. *3rd Workshop on Bias and Fairness in AI* (BIAS 2023), arXiv:2306.12912, poster ■
- 49. F.Hu<sup>+</sup>, P.Ratz<sup>\*</sup> & 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, poster ♣■
- 50. 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, D. poster
- 51. A.Charpentier & L.Barry (2022). The fairness of machine learning in insurance. *Montréal AI Symposium* (MAIS 2022), arXiv:2205.08112, poster
- 52. A.Charpentier (2008). Pricing catastrophe options in incomplete markets. *Actuarial and Financial Mathematics Conference*, Gand, Belgium, 19–31

#### Books (7)



- 53. A.Charpentier (2024). Insurance, biases, discrimination and fairness. Springer Nature ②. ISBN 9783031497827 ♠, InsurFair package ♠
- 54. G. Bénéplanc, A.Charpentier & P. Thourot (2022). Manuel de l'Assurance. Presses Universitaires de France. ISBN 9782130832935 😱
- 55. A.Charpentier (2015). Computational Actuarial Science with R. CRC Press. ISBN 9781138033788, R Casdataset package •
- 56. A.Charpentier & C. Dutang (2013). Actuariat avec R. CRAN.
- 57. M.Denuit & A.Charpentier (2005) Mathématiques de l'assurance non-vie Tarification et provisionnement (Tome 2). Economica (ESA). ISBN 9782717848601 (english)

- 58. M.Denuit & A.Charpentier (2004) Mathématiques de l'assurance non-vie Principes fondamentaux de théorie du risque (Tome 1). Economica (ESA). ISBN 9782717848540
- 59. Collective Actuarial Community Loss Data Analytics. An open text authored by the Actuarial Community. 2019.

# Published papers in French & Dissemination papers (49)

- 60. A.Charpentier (2024). Diversification des risques extrêmes. Risques soon
- 61. A.Charpentier & E.Gallic (2024). Décroissance? Quelle décroissance? Risques soon
- 62. A.Charpentier & L.Barry (2024). Partage des données, à qui profite le crime ? Risques 🔀
- 63. A.Charpentier (2023). Est-il nécessaire (et utile) d'être en guerre contre tout ? Risques 🔀
- 64. A.Charpentier & N.Marescaux (2023). L'incertitude empêche-t-elle de prendre des décisions ? *Risques*
- 65. A.Charpentier (2023). La société du "bullshit", Risques
- 66. A.Charpentier & L.Barry (2023). Y-a-t-il une discrimination contre les pauvres ? *Risques*
- 67. A.Charpentier (2022). Assurance: discrimination, biais et équité. *Institut Louis Bachelier Working Papers*, Opinions & Débats, 25
- 68. A.Charpentier (2022). Le risque climatique, une tendance lente de long terme ? *Risques*
- 69. A.Charpentier (2022). Y-a-t-il des morts acceptables ? ou comment finir une pandémie. *Risques*
- 70. A.Charpentier (2022). Modéliser la contagion. Risques 🔀
- 71. A.Charpentier (2022). Le tabou de l'exponentielle. Risques
- 72. A.Charpentier (2021). Assurance et discrimination, quel rôle pour les actuaires ? *Risques*
- 73. A.Charpentier & E.Gallic (2021). Intelligence collective et données. Risques 🔀
- 74. A.Charpentier (2021). Un double centenaire : Treatise on probabilities de John Maynard Keynes et Risk, Uncertainty and Profit de Frank Knight. *Variance.eu*
- 75. A.Charpentier (2021). Une mesure ne peut être un objectif. Risques 🔀
- 76. A.Charpentier & L.Barry (2020) Concilier risques collectifs et décisions individuelles. *Risques*
- 77. A.Charpentier, L.Barry & E.Gallic (2020) Quel avenir pour les probabilités prédictives en assurance ? *Annales des Mines* doi:10.3917/rindu1.201.0074
- 78. A.Charpentier (2020) Big Data, GAFA et assurance. *Annales des Mines* doi:10.3917/rindu1.201.0053
- 79. R.Bigot & A.Charpentier (2019) Repenser la responsabilité, et la causalité. Risques 🔀

- 80. A.Charpentier (2019) Les autorités publiques face aux risques, de la confiance au doute. *Risques*, 119, 🔼.
- 81. A.Charpentier & B.Cherrier (2019) La valeur de la vie. Risques, 118 🔀
- 82. A.Charpentier (2019) Les classes de risques vont-elles plus loin que les stéréotypes?. *L'actuariel*, 32 .
- 83. A.Charpentier (2019) Du pari au "marché prédictif". Variance.eu 🔀
- 84. A.Charpentier (2019) Petite histoire des paris sportifs. Variance.eu 🔀
- 85. A.Charpentier (2018) Les réseaux pour réinventer l'assurance? Risques 🔀
- 86. A.Charpentier (2018) Histoire du hasard et de la simulation. Risques, 116 🔀
- 87. A.Charpentier (2018) La représentation cartographique des villes. Variance.eu, 🔀
- 88. A.Charpentier (2018) Fake news, post-truth, Wikipedia et blockchain : vérité et consensus. *Risques*, 115,
- 89. A.Charpentier (2018) L'intelligence artificielle dilue-t-elle la responsabilité?. *Risques*, 114,
- 90. A.Charpentier (2018) Les modèles prédictifs peuvent-ils être loyaux et justes. *Risques*, 113, 💆
- 91. A.Charpentier (2017) L'éthique de la modélisation dans un monde où la normalité n'existe plus. *Risques*, 112,
- 92. A.Charpentier (2017) Les marchés prédictifs comme technique de prévision. *Risques*, 111,
- 93. Antonio, K. & A.Charpentier (2017) La tarification par genre en assurance, corrélation ou causalité?. *Risques*, 110,
- 94. A.Charpentier (2016) Les dérives du principe de précaution. Risques, 108, 🔀
- 95. A.Charpentier & T. Renault\* (2016). Les promesses de la blogosphère économique. *L'Écomomie Politique*, 72:4, 10.3917/leco.072.0080
- 96. A.Charpentier & R.Suire (2016) Données et santé: valeurs, acteurs et santé. *Risques*, 107,
- 97. A.Charpentier (2016) Fibonacci, les lapins, le nombre d'or et les calculs actuariels. *Risques*, 106,
- 98. A.Charpentier (2016) La guerre des étoiles: distinguer le signal et le bruit. *Risques*, 105,
- 99. A.Charpentier, A.Eyraut-Loisel, A. Hannart, & J. Tomas<sup>+</sup> (2015) Changement Climatique et Assurance. *Variances*, 54,
- 100. A.Charpentier & B.Cherrier (2015) 'Mathiness' et Assurance. Risques, 104, 🔀
- 101. A.Charpentier, M.Denuit & R.Elie (2015) Segmentation et Mutualisation, les deux faces d'une même pièce. *Risques*, 103,
- 102. A.Charpentier & A.Diogo\* (2015) Barry Big data : passer d'une analyse de corrélation à une interprétation causale. *Risques*, 101,

- 103. A.Charpentier (2015) Interprétation, intuition et probabilités. Risques, 99.
- 104. A.Charpentier (2014) De la difficulté de faire des prévisions (quand on a peu de données). *Risques*, 98.
- 105. B.Coulmont, A.Charpentier & J.Gombin (2014) Un homme, deux voix : le vote par procuration. *La Vie des Idées*, 11 février 2014 hal:00945233 \*\*,
- 106. A.Charpentier (2014) La loi des petits nombres. Risques, 97, 🔀
- 107. A.Charpentier (2014) L'efficience des marchés : hypothèse de modèle ou fait stylisé?. *Risques*, 96, 🔀
- 108. A.Charpentier (2011) La loi des grands nombres et le théorème central limite comme base de l'assurabilité ? *Risques*, 86,

#### Chapters & Participations (16)

- 109. A.Charpentier, E. Flachaire & E. Gallic (2023) Optimal Transport for Counterfactual Estimation: A Method for Causal Inference *in* Optimal Transport Statistics for Economics and Related Topics, Ngoc Thach, Kreinovich, Thanh Ha & Duc Trung Eds. Springer Nature doi:10.1007/978-3-031-35763-3\_3, •••
- 110. A.Charpentier (2023) Quantifying fairness and discrimination in predictive models. *in* Machine Learning for Econometrics and Related Topics, Kreinovich, SriboonchiNa & Yamaka Eds, Springer Nature, doi:10.1007/978-3-031-43601-7\_3
- 111. A.Charpentier (2021) Changement Climatique et Assurance. *in* Le livre vert, E. Challier Ed., Pommier Éditions. ISBN:978-2746523609
- 112. A.Charpentier & R.Bigot (2021) Le rôle des actuaires. *in* Le droit des assurances en tableaux, R.Bigot & A.Cayol Ed., Ellipses Éditions. ISBN:978-2340040045
- 113. A.Charpentier & E.Flachaire (2020) Pareto Models for Risk Management *in* Recent Econometric Techniques for Macroeconomic and Financial Data, G. Dufrénot & T. Matsuki Ed., Springer Verlag, doi:10.1007/978-3-030-54252-8\_14
- 114. A.Charpentier & M.Denuit (2020) On limits for machine learning algorithms in insurance in Insurance data analytics, F.Planchet & C.Y.Robert Ed., Economica. ISBN:978-2717871371
- 115. A.Charpentier (2020) Prévision avec des copules en finance *in* Prévisions en Finance, Charles, Darne & Ferrara Eds., Economica hal:01151233 \*\*,
- 116. D. Cocteau-Senn, A.Charpentier & R. Bigot (2019) La protection des données personnelles en assurance : dialogue du juriste avec l'actuaire *in* Regards sur le nouveau droit des données personnelles, Netter, E., Ndior, V., Puyraimond, J.F., Vergnoll, S. Eds. Ceprisca hal:02357967 ♣ औ,
- 117. A.Charpentier (2018) Central Limit Theorem *in* The SAGE Encyclopedia of Educational Research, Measurement, and Evaluation, B. Frey Ed., SAGE. doi:10.4135/9781506326139.n105
- 118. A.Charpentier & R.Kaas (2014) Introduction *in* Computational Actuarial Science With R, Charpentier, A. Eds. CRC Press. https://doi.org/10.1201/b17230

- 119. A.Charpentier & S.Tufféry (2014) Statistical Learning *in* Computational Actuarial Science With R, Charpentier, A. Eds. CRC Press. https://doi.org/10.1201/b17230
- 120. B.Escoto & A.Charpentier (2014) Bayesian Philosophy *in* Computational Actuarial Science With R, Charpentier, A. Eds. CRC Press. https://doi.org/10.1201/b17230
- 121. A.Charpentier (2014) Modèles statistiques du risque en assurance *in* Statistique du Risque, Droesbeke, Maumy-Bertrand, Saporta & Thomas-Agnan Eds. Technip. ISBN:978-2710809654
- 122. A.Charpentier (2014) Copules et Risques Multiples *in* Statistique du Risque, Droesbeke, Maumy-Bertrand, Saporta & Thomas-Agnan Eds. Technip. ISBN:978-2710809654
- 123. A.Charpentier (2014) Mesures de Risques *in* Statistique du Risque, Droesbeke, Maumy-Bertrand, Saporta & Thomas-Agnan Eds. Technip. ISBN:978-2710809654
- 124. A.Charpentier, J.D.Fermanian & O.Scaillet (2006) The estimation of copulas: Theory and practice. in Copula Methods *in* Derivatives and Risk Management: From Credit Risk to Market Risk, Rank, J. Eds. Risks. ISBN:978-1904339458

### Working Paper & in Progress (26)

- 125. 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
- 126. 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
- 127. F.Hu<sup>+</sup>, P. Ratz\*A.Fernandes Machado\*, S.Grondin\*& A.Charpentier (2024). EquiPy: Sequential Fairness using Optimal Transport in Python. soon •
- 128. O.Côté\*, M.P.Côté & A.Charpentier (2024). A Fair price to pay: exploiting directed acyclic graphs for fairness in insurance. ssrn:4709243 SSRN,
- 129. A.Charpentier & R.Suire (2024). Insurance, Big Tech & Insurtech. soon
- 130. S.Stocksieker\*, D.Pommeret & A.Charpentier (2023). Data Augmentation for Various Imbalanced Datasets. soon
- 131. F.Hu<sup>+</sup>, P.Ratz\* & A.Charpentier (2023). Fairness Explainability using Optimal Transport with Applications in Image Classification arXiv:2308.11090
- 132. X.Vamparys\*& A.Charpentier (2024). Artificial Intelligence and Personalization of Insurance: Failure or Delayed Ignition? *Chaire Pari Working Paper 32*
- 133. X.Vamparys\*& A.Charpentier (2023). Intelligence artificielle et individualisation des garanties en assurance: échec ou retard à l'allumage? *Chaire Pari Working Paper 32*
- 134. F.Hu<sup>+</sup>, P.Ratz<sup>\*</sup> & A.Charpentier (2023). Parametric Fairness with Statistical Guarantees. arXiv:2310.20508
- 135. A.Charpentier, A.Benchallal<sup>+</sup>, G.A.Fotso Kamga\*& Y.Bouroubi (2023). Fire occurrence prediction over the province of Quebec using machine learning algorithms and geospatial datasets. soon

- 136. F.Foutel-Rodier<sup>+</sup>, A.Charpentier & H.Guérin (2023). Optimal Vaccination Policy to Prevent Endemicity: a Stochastic Model. ArXiv:2306.13633
- 137. H.Hu\*, A.Charpentier, M. Ghossoub & A. Schied (2022) Multiarmed Bandits Problem Under the Mean-Variance Setting. arXiv:2212.09192
- 138. M.Hassan\*, A.Charpentier & N. Sakr (2022). Government Intervention in Catastrophe Insurance Markets: A Reinforcement Learning Approach. arXiv:2207.01010
- 139. A.Charpentier, Q.S.Guo<sup>+</sup>& M.Ludkovski (2021) Patterns and Anomalies of Loss Development in P&C Insurance Market.
- 140. E.Belz\*, A.Charpentier, & P.Y. Geoffard (2024) To sue or not to sue.
- 141. V.Grari\*, A.Charpentier, S. Lamprier & M. Detyniecki (2021). A fair pricing model via adversarial learning. arXiv:2202.12008
- 142. A.Charpentier, L.Kouakou, M.Löwe, P.Ratz & F.Vermet (2021). Collaborative Insurance Sustainability and Network Structure. arXiv:2103.03635
- 143. O. Cabrignac, A.Charpentier & E. Gallic (2020) Modeling Joint Lives within Families. arXiv:2006.08446
- 144. A.Charpentier, A.Galichon & L.Vernet\* (2019) Optimal transport on large networks a practitioner guide. arXiv:1907.02320 •
- 145. E.Belz\*& A.Charpentier (2019) Données Agrégées et Variables Compositionnelles : Note Méthodologique. hal:2097031 ∰, poster ■
- 146. A.Charpentier & E.Flachaire (2019) Extended Scale-Free Networks. arXiv:1905.10267
- 147. A.Charpentier (2018) An introduction to multivariate and dynamic risk measures. hal:01831481 \*\*\*,
- 148. M.Boudreault & A.Charpentier (2011) Multivariate integer-valued autoregressive models applied to earthquake counts. arXiv:1112.0929
- 149. A.Charpentier (2010) Reinsurance, ruin and solvency issues: some pitfalls. hal:00463381
- 150. A.Charpentier & D.Causeur (2010) Large-scale significance testing of the full Moon effect on deliveries hal:00482743 \*\*\*,

# Teaching

# Selected courses

Fairness and discrimination in predictive modeling 🜎	MAT998X
Université du Québec à Montréal, Canada	2024
Insurance, biases, discrimination and fairness 🜎 💪	
ENSAE, Saclay, France	2024
Theory of statistical learning	STT8330
Université du Québec à Montréal, Canada	2024
Introduction to data science and artificial intelligence 🕒 🗘	INF7100
Université du Québec à Montréal, Canada	2020

Data Science for Actuaries • (7) Université du Québec à Montréal, Canada	ACT6100 2020
Applied Linear Models	STT5100 19,2020,2021,2022,2023
Statistical Learning Université du Québec à Montréal, Canada	STT3030 2024
Statistics    Québec à Montréal, Canada	STT1000 & MAT4681 2022
Regression Université du Québec à Montréal, Canada	MAT7381 2020
Non-life insurance mathematics ENSAE, Paris, France	2015, 2016, 2017
Networks and flows Université de Rennes 1	2017
Welfare and inequalities Université de Rennes 1	2016,2017, 2018
Time Series Université du Québec à Montréal, Canada	MAT8181 2014
Copulas and Extreme Values Université du Québec à Montréal, Canada	MAT8595 2014
► YouTube channel Courses ~ 66,000 views	since 2020
Summer schools	
Insurance, biases, discrimination and fairness Warsaw Actuarial Summer School, Poland	2024
Econometrics and Machine Learning Società Italiana di Econometria (SIdE), Italy	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, Italy	2018
Econometrics and Machine Learning Universitat de Barcelona, Spain	2018
Other Institutions	
École Polytechnique	France, 2008-2010
Đại học Kinh tế Thành phố, Hồ Chí Minh	Vietnam, 2008
Institut de Statistique de l'Université de Paris (ISUP)	France, 2008
Institut de Mathématiques Appliqués, Angers	France, 2007
INSEA, Rabbat	Marocco, 2006
Université Saint-Joseph, Beyrut	Lebanon, 2006
ENSEA, Abidjan	Ivory Coast, 2003

# Professional training

**Data Science for Actuaries** Paris, France Institut des Actuaires 2015-2018 **Data Science & Machine Learning for Actuaries** Istanbul, Singapore & Paris AXA Group **Machine Learning for Insurance** Niort, France MAIF Insurance 2014 **Natural Catastrophes & Cat Bonds** Paris, France AXA Group 2007 **R for Actuarial Science** Paris, France

2006-2007

This version: June 2024

AXA & Caritat (professional training)