

# ARTHUR CHARPENTIER

 0003-3654-6286 |  freakonometrics |  |  |  detailed cv | [blog](#) | 

## EXPERIENCE

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- 2018-now UQAM, Mathematics Department, Full professor
- 2017-now Université de Rennes, Faculty of Economics, Full Professor
- 2014-2017 Université de Rennes, Faculty of Economics, Assistant Professor
- 2011-2014 UQAM, Mathematics Department, Professor
- 2010-2011 UdeM, Mathematics Department, Visiting professor
- 2008-2010 École Polytechnique (France), Lecturer

## EDUCATION

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- 2017 HDR (Habilitation à Diriger des Recherches) Applied Mathematics (Université de Rennes, France)
- 2006 PhD Applied Mathematics (KU Leuven, Belgique)
- 1999 Master (MSc) Mathematical Economics (Université Paris Dauphine, France)
- 1999 Master (MSc) Statistics and Actuarial Science (ENSAE, Paris, France)

## PUBLICATIONS (SELECTION)

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More than 3200 citations , complete list 

### Books (5)

- 2024 AC. *Insurance, biases, discrimination and fairness*. Springer Nature.
- 2022 G. Bénéplanc, AC. & P. Thourot. *Manuel de l'Assurance*. Presses Universitaires de France.
- 2015 AC. *Computational Actuarial Science with R*. CRC Press.

### Articles (45, peer reviewed )

- 2024 S. Stocksieker, D. Pommeret & AC. Generalized Oversampling for Learning from Imbalanced datasets and Associated Theory: Application in Regression, *Transactions on Machine Learning Research*
- 2023 L. Barry & AC. Melting Contestation: Insurance Fairness and Machine Learning, *Ethics & Information Technology*
- 2022 AC., L. Barry & M. James. Insurance against Natural Catastrophes: Balancing Actuarial Fairness and Social Solidarity. *Geneva Papers on Risk & Insurance*,
- 2021 M. Denuit, AC. & J. Trufin. Autocalibration and Tweedie-dominance for Insurance Pricing with Machine Learning. *Insurance: Mathematics and Economics*, 101, 485–497
- 2021 AC., R. Élie & C. Remlinger. Reinforcement Learning in Economics and Finance. *Computational Economics*,
- 2021 AC., S. Mussard & T. Ouraga. Principal Component Analysis: A Generalized Gini Approach. *European Journal of Operational Research*, 294

### Conferences (7, peer reviewed)

- 2024 A. Fernandes-Machado, AC., E. Flachaire, E. Gallic & F. Hu. Post-Calibration Techniques: Balancing Calibration and Score Distribution Alignment. *Conference on Neural Information Processing Systems (NeurIPS 2024)*
- 2024 S. Stocksieker, D. Pommeret & AC. 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)*
- 2024 F. Hu, P. Ratz & AC. A Sequentially Fair Mechanism for Multiple Sensitive Attributes. *38th Annual AAAI Conference on Artificial Intelligence (AAAI 2024)*,
- 2023 AC., F. Hu & P. Ratz. Mitigating Discrimination in Insurance with Wasserstein Barycenters. *3rd Workshop on Bias and Fairness in AI (BIAS 2023)*
- 2023 F. Hu, P. Ratz & AC. Fairness in Multi-Task Learning via Wasserstein Barycenters. *Machine Learning and Knowledge Discovery in Databases: Research Track (ECML/PKDD 2023)*
- 2023 S. Stocksieker, AC. & D. Pommeret. Data Augmentation for Imbalanced Regression. *Proceedings of The 26th International Conference on Artificial Intelligence and Statistics (AISTATS 2023)*, 7774–7799


## Dissemination (49, in French)

- 2024 AC. Diversification des risques extrêmes. *Risques*, 139.  
2024 AC. & E. Gallic. Décroissance? Quelle décroissance ? *Risques*, 138.  
2024 AC. & L. Barry. Partage des données, à qui profite le crime ? *Risques*, 137.  
2023 AC. Personne n'est préparé à l'augmentation exponentielle des pertes liées au risque climatique *Le Monde*

## Chapters (16)

- 2023 AC., E. Flachaire & E. Gallic. Optimal Transport for Counterfactual Estimation: A Method for Causal Inference *in* Optimal Transport Statistics for Economics and Related Topics, Springer Nature  
2023 AC. Quantifying fairness and discrimination in predictive models. *in* Machine Learning for Econometrics and Related Topics, Kreinovich, SriboonchiNa & Yamaka Eds, Springer Nature  
2021 AC. Changement Climatique et Assurance. *in* Le livre vert, E. Challier Ed., Pommier Éditions.

## Working Papers (26, submitted)

- 2024 A. Fernandes-Machado, F. Hu, P. Ratz, E. Gallic & AC. Geospatial Disparities: A Case Study on Real Estate Prices in Paris.  
2024 A. Fernandes Machado, AC., E. Flachaire, E. Gallic & F.Hu. From Uncertainty to Precision: Enhancing Binary Classifier Performance through Calibration   
2024 X. Vamparys & AC. Artificial Intelligence and Personalization of Insurance: Failure or Delayed Ignition?  
2024 O. Côté, M.P. Côté & AC. A Fair price to pay: exploiting directed acyclic graphs for fairness in insurance.  
2023 F. Foutel-Rodier, AC. & H. Guérin. Optimal Vaccination Policy to Prevent Endemicity: a Stochastic Model.  
2023 H. Hu, AC., M. Ghossoub & A. Schied. Multiarmed Bandits Problem Under the Mean-Variance Setting.  
2022 M. Hassan, AC. & N. Sakr. Government Intervention in Catastrophe Insurance Markets: A Reinforcement Learning Approach.

## CONFERENCES AND SEMINARS (RECENT SELECTION)

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### Organisation

- 2024 2nd Workshop of Fairness and Discrimination in Insurance (Laval University, organising committee); 6th Insurance Data Science conference (Stockholm, scientific committee)  
2023 Networks, Games and Risk (UQAM, organising committee); Modeling of Infectious Diseases Colloquium (CRM-Fields); 5th Insurance Data Science conference (London, (scientific committee)  
2022 CIRM Luminy (scientific committee); 4th Insurance Data Science conference (Milano, (scientific committee)

### Conferences

- 2024 Canadian Econometrics Study Group (CESG, Toronto, invited); 27th International Congress on Insurance: Mathematics & Economics (Chicago); Optimization Days (Montréal); Optimal Transport Workshop (IES, Cargèse, invited); European Actuarial Journal (EAJ) Conference (Lisboa); Insurance Data Science (Stockholm)  
2023 Foundations and Applications of Decentralized Risk Sharing (Leuven, invited); 16th Annual Conference of Thailand Econometric Society (Chiang Mai, invited); 6th International Econometric Conference of Vietnam (Thành phố Hồ Chí Minh, invited); SSC Annual Meeting (Ottawa, invited)  
2022 Workshop on Impacts of Climate Change (Fields Institute, Toronto, invited); Simulation & IA 2022 (Cargèse Corsica, keynote); Actuarial Sciences and Applications (CIRM, Luminy, France, keynote)

### Seminars

- 2024 Københavns Universitet; Sorbonne Université; Sorbonne Center for Artificial Intelligence (SCAI); LPSM Paris  
2023 ENS Ker-Lann; UdeM & CIREQ Econometrics Seminar; Bayes Business School; University of Waterloo; Séminaire Bachelier (IHP, Paris); ESSEC (Paris)  
2022 University of Illinois; CIMMUL (Laval); Université Paris Nanterre; StatQAM (UQAM)

### Practitioners

- 2024 Workshop on Trustworthy AI (HEC Montréal); Actuarial Contact Program (Leuven); SCOR; TD General Insurance; Akur8; Chaire Thelem; Data Talk Generali; Institut des Actuaire  
2023 Intact Seminar; TD General Insurance; Data Science Institute; AG2R; Alvidence

2022 Beneva (La Capitale & SSQ Assurance); Optimind Webinar; Cov&Data, Covea (MAAF, MMA & GMF); DataDay MAIF; Casualty Actuarial and Statistical Task Force (CASTF); Groupama; Chaire DIALog; Institut des Actuaire; IVADO; AXA; Institut Louis Bachelier

## **SUPERVISION (RECENT)**

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### **Postdoctoral Fellows**

ongoing Arsene-Brice Zotsa Ngoufack (co-supervised H. Guérin); Marouane Il-Idrissi (co-supervised M.P. Côté)  
former François Hu (now Milliman Paris R&D); Félix Foutel Rodier (now Oxford - MAP5 Paris Cité); Amirouche Benchallal (now Natural Resources Canada); Ewen Gallic (now Aix-Marseille); Arnaud Goussebaïle (now ETH Zürich)

### **PhD Student**

ongoing Agathe Fernandes Machado (UQAM); Olivier Côté (Laval, co-supervised M.P. Côté); Hongda Hu (Waterloo, co-supervised M. Ghossoub & A. Schied);  
former Samuel Stocksieker (Lyon); Philipp Ratz (UQAM); Enora Belz (Rennes); Antoine Ly (Paris-Est, co-supervised R. Élie); Amadou Barry (UQAM, co-supervised K. Oualkacha)

### **MSc Students and Interns**

2025 Antoine Gilson (ENSAE Paris)  
2024 Noé Bosc-Haddad (École Centrale, Paris); Aña María Patrón Piñerez (Universidad de los Andes); Julien Siharath (Université de Rennes); Florent Crouzet (École Polytechnique)  
2023 Suzie Grondin (ENSAE); Gaspard Ichas (ENSAI); Nathan Herzhaft (École Polytechnique); Kim Anh Lê (Ludwig Maximilian University of Munich)  
2022 Martin de Closets (École Polytechnique); Franklin Feukam Kouhoue (ENSAE); Rawanda Matar (UQAM)

### **Jury**

HDR (3) Emilie Devijver; Christophe Dutang; Nabil Kazi-Tani  
PhD (34) Marc Yeterian; Wistan Marchadour; Marouane Il Idrissi; Eric Vansteenbergh; Dafnis Krasniqi; Bertille Picard ; Lucas de Lara; Pierre Chatelain; Antoine Heranval; Geoffrey Ecoto; Guillaume Boglioni Beaulieu, etc;

## **SERVICE AND DUTIES**

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### **Committees and Reviews**

2022-2025 NSERC (Natural Sciences and Engineering Research Council of Canada) Maths & Stats 1508 Evaluation Group  
2022-2025 CANSSI (Canadian Statistical Sciences Institute) Member of the Board of Directors  
2019-2023 FRQNT Member of the jury (B1/B2/B3-03E), Master, PhD, Postdocs

### **Editorial**

ongoing Journal of Risk and Insurance (Senior Editor); ASTIN Bulletin: The Journal of the IAA; Risk  
former European Actuarial Journal

### **Reviews**

- ANR; AXA Research Fund; FNR Luxembourg CORE; FRQNT; F.R.S.-FNRS; MICTACS; NSA; NSERC; IVADO; ANRT; ISF; NWO; HK RGC; OBVIA
- MIT Press; Springer Verlag; CRC Press; SAGE; Cambridge University Press

### **TEACHING**

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- UQAM: ACT6100, INF6100, MAT4681, MAT7381, MAT998P, STT1000, STT3030, STT5100, STT8330
- ENSAE; Società Italiana di Econometria; Università degli studi dell'Insubria; Universitat de Barcelona

## **GRANTS AND PROJECT (RECENT)**

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2023-2026 SCOR Foundation,  
2020-2022 AXA Research Fund,  
2019-2026 NSERC Discovery Grant