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General Informations

Current Position	Postdoctoral position at Concordia University, Department of Mathematics & Statistics
Research Interests	Statistics (computational statistics; statistical modelling; frequentist and Bayesian inference, Monte-Carlo Methods, and Simulations) Finance (actuarial finance; stochastic volatility; hidden Markov chains; Hedging and portfolio optimization) Machine Learning (reinforcement learning, autoencoders).
Affiliations	Quantact actuarial and financial mathematics laboratory.
Languages	English (fluent), French (native).
IT Abilities	Python, R, C++, SAS, MATLAB, SPSS, SQL, VBA, Stata, Latex.

Education

2016 - 2022 | Université de Montréal, Montreal, Quebec:
Ph.D. Candidate in Statistics,
- Dissertation: «Modelling Financial Volatility with High Dimensional Hidden Markov Models».
- Supervisor: Maciej AUGUSTYNIAK, co- Supervisor: Mylène BÉDARD.
- Cumulative Score: 3.96/4.30.

2013 - 2016 | École Nationale de Statistique et d'Analyse Economique (ENSAE), Dakar, Senegal.
M Sc (with honor) in Applied Statistics and Economy.

2010 - 2013 | École Nationale d'Économie Appliquée et de Management (ENEAM), Cotonou, Benin.
B Sc (with honor) in Applied Statistics.

Teaching and Research Experience

Since Sep 2022 | Postdoctoral Researcher: "Portfolio risk attribution through non-linear factor analysis: A machine learning approach", Department of Mathematics & Statistics, Concordia University

May 2021 – Aug 2021 and Jan 2022 – Aug 2022 | Lecturer of the course : " Forecasting Methods ", Département de Mathématiques et de Statistique (DMS), Université de Montréal, Montreal, Quebec
- Econometrics models (SARIMA, Box & Jenkins methods, etc.) for forecasting.
- Models' diagnostics (Heteroskedasticity, Auto-correlation, residuals tests, etc.);

Mar 2021 | Development of an R Package named "MDSV"
- for modelling high dimensional Hidden Markov Models;
- available on GitHub: https://github.com/Abdoulhaki/MDSV .

Jan 2017 – Dec 2021 | Teaching assistant in several courses (face-to-face and online), Département de Mathématiques et de Statistique (DMS), Université de Montréal, Montreal, Quebec
- Survival analysis, Stochastic process, financial mathematics, Linear algebra, Introduction to statistics, Experimental specifications and biostatistics, Differential calculus, Integral calculus.

Jul 2015 – Jan 2016 | Research internship, École Nationale de Statistique et d'Analyse Economique (ENSAE), Dakar, Senegal
- Dissertation: "Impact of Climate-Income on Life Expectancy in Northern Benin";
- In collaboration with the WASCAL research center and the University of Bonn, Germany.

Work Experience

Since Jun 2019 | Quant Researcher, Quantolio,
- Production of a constrained portfolio hedging algorithm
- Data mining and analysis
- Algorithm of data importation to reduce storage space and execution time

	- Optimization of algorithms to reduce execution time. - Management of three interns
Apr 2019 – Jul 2019	Internship MITACS, Caisse de Dépôt et de Placement du Québec (CDPQ), - Development of tools for estimating and visualizing the regime change models.
Sep 2016 – Apr 2018	Volunteering: Graduate Student Association of DMS, Université de Montréal, - Secretary of the mathematics and statistics graduate student association (AECSMS)
Feb 2015 – Jun 2016	Volunteering: global platform for young people to explore and develop their leadership potential (AIESEC), Senegal
Jan 2015 – Apr 2015	Consultant at Agence Nationale de la Statistique et de la Démographie (ANSD), Senegal
Nov 2014 - Jul 2015	Volunteering: Student and Interns Association of ENSAE (AES – ENSAE) - Secretary General of AES-ENSAE; - Director of the Junior Enterprise of ENSAE; - Survey carried out: Analysis of the fuel consumption behavior of public transport drivers.
Jun - Sep 2013	Internship at Direction Générale des Affaires Economique (DGAE) in Benin - Dissertation: "Estimation and forecasting of the evolution of producer prices of food products in Benin: Analysis from a synthetic index".

Scholarships, Awards and Distinctions

2020	Serge Tardif Fellowship (awarding the best graduate student in statistics at DMS)
2019	MITACS Fellowship.
2018 - 2021	Scholarships of Fonds de Recherche du Québec – *Nature et Technologie.*
2017 - 2018	ISM Fellowships (Institut des Sciences Mathématiques).
2016 - 2017	Doctoral Fellowship of excellence of DMS, Université de Montréal.
2015	WASCAL Master-Thesis Fellowship.
2010 - 2013	Scholarship of excellence for B.Sc, Université d'Abomey Calavi, Benin.
2010	Distinction JDP: Jour Des Premiers (awarded to the 100 best students in Benin for the French baccalaureate exam).

Work in Progress

- " Green portfolio optimization under GARCH framework using Reinforcement Learning", with *Frédéric Godin* and *Zaniar Ahmadi*
- "Inference for Two-Stage Extremum Estimators", with *Aristide Houndetoungan*
- "Multifractal discrete stochastic volatility (MDSV)", with *Maciej Augustyniak* and *Arnaud Dufays;*
- "Infinite factorial hidden Markov volatility (iFHMV)"*;*
- "Lockdowns lifting: Thanks to governments COVID-19 measures or to good weather? What do data say?", with *Chaffa Odjouwoni Lucien Chaffa* and *Idossou Marius Adom.*

Invited talks, Conferences and Workshops

2021	- Statistical Society of Canada (SSC) annual meeting, Virtual sessions.
2020	- 9th workshop for graduate students in actuarial and financial mathematics - Montreal Industrial Problem-Solving Workshop, CRM.
2019	- Symposium Annuel de Mathématiques pour un Avenir en Recherche et en Industrie (SAMARI), Montreal (Canada), - Sommet étudiant de la statistique à Montréal (SÉSAM), UQAM, Montreal (Canada), - Workshop (SEME) at Orsay (France), CRM funding.