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RE: NBER Call for Applications: Digital Economics and AI Tutorial

Graduate Course Overview

I am a Ph.D. candidate in Economics at the University of Ottawa, enrolled since 2018. My doctoral studies focus on econometrics, international finance, and energy markets. Building on a solid foundation in mathematical economics and econometrics from my undergraduate and master's education at the University of Yaoundé II, Cameroon, I have developed expertise in advanced quantitative methods to address global economic challenges.

My coursework includes financial econometrics, big data analytics, and advanced econometric modeling, equipping me to explore complex systems at the intersection of technology and economics. These skills form the basis of my research on financial stability, market dynamics, and policy-making.

Research Interests

My research lies at the intersection of econometrics, artificial intelligence, and digital economics. Key areas of focus include:

1-Digital Economics and Shock Transmission: My job market paper employs a regime-switching model to analyze shock transmission in sovereign bond markets. This approach has significant implications for digital economics, particularly in understanding how technology-driven shocks propagate through interconnected markets.

2- Machine Learning in Financial Econometrics: I integrate AI and machine learning into econometric modeling to forecast asset prices and analyze market volatility. For example, I have applied supervised learning techniques to improve the accuracy of risk assessments in financial markets, offering valuable insights into the predictive power of AI-driven methods.

3- Energy Market Dynamics and AI: My research extends to energy markets, where I use econometric models augmented with machine learning to study price volatility and the impacts of global shocks. These tools provide actionable insights into energy stability, which is critical in a digitized global economy.

4- Policy Implications of AI and Digital Tools: I explore how AI technologies influence economic policy design, particularly in areas like monetary policy and trade. My work highlights the potential for AI to enhance decision-making in a rapidly evolving digital economy.

My dissertation, titled **"Advanced Econometric Approaches to Financial and Asset Market Stability"** investigates these topics, bridging econometric theory and practical applications. Committee members include Professors Maral Kichian (University of Ottawa) and Ba Chu (Carleton University).

Current Research Projects

1. "Forecasting Energy Markets: A Markov-Switching Augmented Factor Approach": This project leverages AI and big data techniques to predict energy prices under varying market regimes, addressing volatility caused by geopolitical and digital shifts.

2. "Wild Bootstrap Tests of Contagion in Multivariate Asset Markets": A novel econometric approach incorporating asset market data to assess risk propagation in financial systems.

3. "Panel Data Models with Spatially Correlated Two-Way Error Components": This work investigates how spatial correlations, amplified by digital interconnectivity, influence regional economic dynamics.

Motivation for Attending

Participating in the NBER Digital Economics and AI Tutorial aligns perfectly with my academic and professional goals. The tutorial's focus on cutting-edge AI applications and digital economics resonates with my research on leveraging AI in econometric modeling and market forecasting.

Engaging with leading researchers and peers at this event will deepen my understanding of digital economic frameworks and their implications for global development. Additionally, the opportunity to attend the NBER Digital Economics and AI Meetings will allow me to network with experts and exchange ideas to refine my research trajectory.

Thank you for considering my application. I am eager to contribute to the discussions and apply the knowledge gained to advance impactful research in digital economics and AI.

Sincerely,

Emile Herve Ndoumbe