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Graduate School Courses

In my PhD program, I embarked on an intellectually stimulating journey from 2020 to 2022, covering an expansive and intensive array of disciplines that ranged from Econometrics to Machine Learning. Here's a detailed outline of my course of study:

Beginning in 2020, I focused on four pivotal areas:

- **Advanced Econometrics:** I delved into the intricate analysis of economic data using statistical models. Mastering Generalized Method of Moments (GMM), Maximum Likelihood Estimation (MLE), and Time Series Analysis, I honed my understanding of both cross-sectional and longitudinal data.
- **Advanced Microeconomics:** I explored complex theoretical models and their mathematical underpinnings, dealing with market structures, game theory, and information economics. This deepened my understanding of individual and firm behavior.
- **Advanced Macroeconomics:** I assimilated the nuances of macroeconomic phenomena at a global level, making use of dynamic optimization and stochastic calculus. The coursework covered expansive topics such as DSGE models, business cycle theory, and monetary policy.
- **Panel Economics:** Focusing on handling data that spans multiple time periods, I garnered expertise in fixed effects models, random effects models, and instrumental variable techniques, enabling a comprehensive understanding of time-variant and invariant phenomena.

Moving on to 2021, I immersed myself in three more fields:

- **Monetary Economics:** I took a deep dive into money supply, demand, and policy implications. My studies encompassed complex models of inflation, interest rates, and monetary policy, amplifying my grasp on central banking mechanisms.

- **Machine Learning and TensorFlow:** I developed proficiency in predictive modeling and neural networks, deciphering patterns in large datasets and optimizing decision-making processes based on the insights derived.
- **C++ for Financial Engineering:** I learned to develop sophisticated financial models, implement pricing algorithms, and conduct risk analysis using C++, further enhancing my technical skills.

Finally, in 2022, I rounded out my education with the following subjects:

- **Corporate Finance:** I gained a solid understanding of financial decision-making processes within corporations, tackling topics such as capital budgeting, dividend policy, and mergers and acquisitions.
- **Micro-structure:** I delved into order execution, market liquidity, and transaction costs, understanding the minutiae of trading and the dynamics of financial markets at a granular level.
- **Mathematics for Economics:** I honed my skills in calculus, linear algebra, and differential equations, the mathematical foundations that underpin economic theory.

This intensive and comprehensive interdisciplinary course of study has equipped me with a sophisticated toolkit, enabling me to approach economic and financial problems with an advanced and innovative perspective.

Research Interests and Projects

My research interests lie at the intersection of economic welfare, blockchain economics within the fintech sphere, and the intriguing field of ethics in artificial intelligence (AI).

In the realm of AI ethics, I am particularly drawn to investigating the ethical implications of AI technologies. My focus is on understanding how these advancements impact crucial issues such as privacy, fairness, and transparency. I am dedicated to exploring ways in which AI systems can be designed and implemented to respect and uphold human values and rights, and how these systems influence societal structures and norms.

Recently, I delved into the economics of blockchain technology, assessing the Ethereum Improvement Proposal (EIP-1559) and its impact on the Ethereum network. The investigation highlighted the potential of blockchain in enhancing network functionality, but also revealed the complexity of its effects on price volatility.

At the heart of my research is a passion for dissecting the intricate ethical and economic implications of rapidly evolving technologies, and their influence on societal welfare.

Dissertation

- **Dissertation Title:** Artificial Intelligence and Economic Outcomes: An Empirical Investigation into AI's Impact on Labor Markets and Income Inequality
- **Description:** This dissertation explores the multifaceted impact of Artificial Intelligence (AI) on economic outcomes, particularly within labor markets and income distribution. It investigates how AI-induced automation influences job displacement, wage inequality, and labor market dynamics. Furthermore, the study critically examines the role of AI in exacerbating or mitigating income inequality, taking into account factors like skill levels, sectors, and geographical disparities. Through robust empirical analyses, this research provides valuable insights into the economic implications of AI, contributing to informed policy-making in the era of rapid technological advancement.
- **Committee Member:** Prof. Christos Giannikos, Zicklin School of Business, Baruch College. An expert in Investments, Asset Pricing, Capital Market Theory, and Continuous Time Finance.