Application to the NBER Digital Economics and AI Tutorial

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Graduate Study

I am a fourth-year PhD candidate in Finance at the University of Lausanne and the Swiss Finance Institute, supervised by Professor Eric Jondeau. I enrolled in the PhD program in September 2023. My research focuses on the macroeconomic and asset-pricing implications of artificial intelligence, particularly how differences in production technologies and input-output linkages across sectors shape the effects of AI.

My doctoral training covers asset pricing, corporate finance, econometrics, international finance, and game theory. I also studied additional PhD courses on the applications of natural language processing, AI, and machine learning in finance and macroeconomics. Before beginning my PhD, I completed an MSc in Financial Technology at the Hong Kong University of Science and Technology, with coursework centered on machine learning, optimization, and financial applications of AI.

Research Interests

My research interests lie at the intersection of macroeconomics, technological innovation, sustainability, and asset pricing. My work examines how large structural forces, including artificial intelligence and climate policy, affect the real economy and financial markets.

My principal ongoing project, *Artificial Intelligence and Asset Prices in a Production Network*, studies how AI changes economic activity and the distribution of risk across sectors. I develop a multisector general-equilibrium model in which an AI-producing sector supplies AI service inputs used alongside labor and capital, while sectors are connected through purchases of intermediate and investment goods. The allocation of tasks between AI and conventional inputs varies across sectors, depending on relative costs and comparative advantage. This framework links AI's effects on production, investment, and labor demand to sectoral cash flows and asset prices.

The central question is how a sector's direct use of AI and its position in the production network jointly determine its exposure to technological change. I examine how improvements in AI efficiency propagate through suppliers and customers, and how the resulting changes in exposure to aggregate and sectoral shocks affect equity risk premia.

Another ongoing research project, *Blended Finance and Carbon Tax*, examines how public concessional finance combined with private finance can support investment in emissions abatement. Using an environmental general-equilibrium model with financial frictions, I study the interaction between carbon taxation, financing conditions, and the macroeconomic costs of the transition. This project complements my broader interest in how investment and financing decisions shape economy-wide adjustment.

Motivation for Attending

The Digital Economics and AI Tutorial would help me place my AI research within the broader digital economics literature and sharpen the connection between its theoretical mechanisms and empirical evidence. I am particularly interested in learning about the measurement of AI adoption and diffusion, the mechanisms through which AI affects economic activity, and the heterogeneous effects of technological change across firms and industries. Participating in the tutorial and the subsequent NBER Digital Economics and AI meetings would allow me to exchange ideas with researchers from different areas of economics, receive valuable perspectives on my ongoing work, and further develop my research agenda on the macroeconomic and financial implications of AI.