



FEDERAL RESERVE BANK
OF PHILADELPHIA

Federal Reserve Bank of Philadelphia
Research Department

March 30, 2025

Office of the Dean
Faculty of Economics
Ludwig-Maximilians-Universität München

RE: Professorship (W2) (6 years/tenure track) of AI in Economics

Dear Search Committee,

I am writing to express my strong interest in the Professorship of AI in Economics at LMU. I believe my background as a Senior Machine Learning Economist at the Federal Reserve Bank of Philadelphia makes me an ideal fit for this role. My research focuses on the intersection of machine learning and economics, and I have experience teaching at the intersection of these two fields.

Recent advances in machine learning and flexible estimation methods have created both new opportunities and new challenges for economists. Much of my current research focuses on the interplay between these advances and the estimation of economic models. In particular, my work falls into three broad categories: causal inference in panel data, matrix factorization methods for high-dimensional data, and utilizing machine learning in household finance applications. I elaborate on these in the accompanying application form. I have published my research in leading economics journals, such as the *American Economic Review* and the *Journal of Econometrics*.

Prior to joining the Federal Reserve Bank of Philadelphia, I taught a class at the intersection of machine learning and economics (titled “Big Data”) to advanced undergraduate and graduate students at Brown University.

At the Federal Reserve Bank of Philadelphia, I have also been at the forefront of implementing machine learning models in practice (exemplary use cases include modeling the value of securities and predicting institutional risk), bridging the gap between cutting-edge AI techniques and real-world economic policy.

I am excited about the prospect of joining LMU and contributing to its dynamic community. With outstanding econometrics and empirical/applied economics groups, alongside the MCML and AI-Hub initiatives, LMU stands out as an exceptionally attractive environment. Finally, I am excited about the prospect of “coming home” to Germany.

You can find additional information, including my current working papers, on my website at www.simonfreyaldenhoven.com. Thank you for your consideration, and I look forward to hearing from you.

Sincerely,

Simon Freyaldenhoven