Nam Nguyen, PhD

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I am an experienced Applied Econometrician and Data Scientist with cutting-edge training in methodologies such as *State-Space Model*, *Forecasting Techniques*, *Machine Learning*, *Time Series Analysis*, *Quantitative Methods and Data Visualization*. Additionally to the macro econometrics techniques that I specialized in, I am also proficient in model testing and validation, the methodologies I used include *Model Selection*, *Model Average*, *K-fold Cross Validation* and *Boostrapping*. I am experienced in statistical software such as *Python*, *R*, *Matlab*, *SAS* and *Stata*. I am also familiar with database management language such as *SQL* and data visualization tools such as *Tableau, R(ggplot2) and Python(matplotlib)*. Currently, I am looking for an full time risk management - model analyst position where I can apply my expertises in the banking industry.

Areas of Expertise

- Econometrics
- Quantitative Methods
- Machine Learning
- Forecasting
- Data Analysis
- Cross-validation
- Structural Modelling
- Uncertainty Quantification

Data Science Skills

Methodologies and Tools

- Time Series: *ARIMA, VAR, Stochastic process, State-space models, Kalman Filter, Forecasting*
- Machine Learning: *KNN, Neural Networks, LDA, QDA, Random Forest, Bagging, Boosting*
- Causal Inferences: *A/B Testing, Difference in Difference, Regression Discontinuity, Instrumental Variables*
- Panel Regression: *Fixed Effects, Random Effects, Quantile Regressions*
- Bayesian Methods: *Gibbs Sampling, Metropolis-Hasting Algorithm*
- Resampling Methods: *K-fold Cross-validation, Boostrapping*
- Model Comparison: *Model Selection (Ridge, Lasso, Elastic Net, Markov Chain Monte Carlo Model Comparison MC3), Model Average (Bates and Granger, Bayesian Model Average)*

Computer Programming

- Statistical Tools: *Python (numpy, scikit-learn, tensorflow), R, Matlab, C++, Stata, SAS*
- Data Management: *Python (Pandas), MySQL, Tableau*
- Bayesian Analysis Tools: *Dynare, Winbug*
- Scripting Tools: *Latex, RMarkdown, MS Office*

Research Projects

1. **Identifying Unsustainable Credit Gap** (January 2022 - August 2022)
   - This project implements model selection and model average to overcome model uncertainty problem and improve performance of total credit gap as a predictor of financial crises. The model uses quarterly panel data of 50 years across 40 countries. The methods used are *Fixed Effect Within Estimator, Logistic Regression, Model Selection, Bayesian Model Average, Partial Area Under the ROC Curve (pAUC), Index Synthesizing, K-fold Cross-validation*, and *Policy Function Optimization*.

2. **Measuring Credit Gap** (January 2021 - December 2021)
   - This project utilizes the cyclical property of short-run component of a nonstationary series to improve out-of-sample prediction of its future changes. We set up a horse race for forecasting models and implement forecast combination of multiple credit gap measurements to improve predictive performance on future total credit changes. The methods used includes *Trend-Cycle Decomposition, Bate-Granger Forecast Combination* and *One-sided Adaptive Model Average*.
   - Submitted for review in the Journal of Business Cycle Research (January 2023)

3. **House Prices and Credit Cycles** (June 2019 - Dec 2020)
   - This project exploits a model that allows for household credit and house prices to be jointly determined in both short run and long run. The quarterly data used in this paper span across 17 developed countries for 30 years. The methodology used in this project allows for measuring the directions and magnitudes of the effects the two

variables have on each other. More importantly, the timing of the effect can also be estimated using a *State-Space Framework*. The methodologies used are *Vector Autoregression, Bayesian Inference (Random-Walk Metropolis-Hasting algorithm), Kalman Filter, State-Space models* and *Non-linear Impulse Response Function*.

Professional Experience

Sep 2017 - Aug 2022   **PhD Candidate & Instructor**   University of Wisconsin - Milwaukee
Milwaukee, Wisconsin, US
- Taught a diverse set of students with a wide range of technical backgrounds
- Clearly communicated statistics and economic theory, with the express purpose of applying it to analyze real data

Jan 2017 - Aug 2017   **Research Assistant**   America Institutes for Research
Washington, D.C, US
- Designed and quality controlled standardized tests for public grade school students

Teaching Experience

Instructor: Principles of Macroeconomics x6 ● Principles of Microeconomics x2 ● Introduction to Economics
Teaching Assistant: Intermediate Microeconomics ● Principles of Macroeconomics x3 ● Principles of Microeconomics x3

Education

2022   **Ph.D. Quantitative Economics and Econometrics**   University of Wisconsin - Milwaukee
Milwaukee, Wisconsin, US

2016   **M.A. Economics**   University of Illinois at Chicago
Chicago, Illinois, US

2013   **B.A. Economics and Business Administration**   Coe College
Cedar Rapids, Iowa, US

Certificates

SQL - HackerRank
Machine Learning with Python - Kaggle

Memberships

American Economic Association
Midwest Economic Association
National Association for Business Economics

Awards and Honors

2019-2021   **Chancellor's Graduate Student Award in Economics**
University of Wisconsin - Milwaukee

2018-2022   **Graduate Teaching Assistantship**
University of Wisconsin - Milwaukee

2014-2016   **Graduate Teaching Assistantship**
University of Illinois at Chicago

2011, 2013   **Dean's List**
Coe College

References

Provided upon request

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January 26, 2023

Dear Dear Sir/ Madam,

I am a economist and a data scientist with a strong background in econometrics, time series, quantitative analysis, statistical data analysis, machine learning. I would welcome the opportunity to speak with you directly regarding the "Risk Management - Model Analyst" position at Wintrust Financial Corp.

My field of research is in macroeconomics, applied econometrics, credit analysis and early warning system of financial crises. I obtained my Ph.D. in Economics from the University of Wisconsin - Milwaukee (UWM) in September 2022 with a dissertation on "Measuring Credit and Property Prices Gaps". In addition, I have earned a Master's in University of Illinois at Chicago in economics. And I did my Bachelor in Coe College, Iowa in economics and business administration with a minor in Mathematics. Currently, I have attained the STEM OPT work authorization and I am available to start working for 3 years without sponsorship. Finally, I am more than willing to move to the city of Chicago where I had many fond memories of.

I am sharing my resume for more information about my expertise and research publications here. My experience as an economist includes more than five years of experience working with credit data, asset pricing, forecasting methods, causal models and quantifying risk. And especially in the last chapter of my PhD dissertation, I show my work and experience in model testing including out-of-sample prediction, model average techniques. All my records in academia and industry show my solid background in my field of study, theoretical and statistical aspects.

I have demonstrated the perseverance, commitment, and ambition necessary to succeed in a highly competitive environment throughout my education. I would be grateful if you could spare the time on my documents. If you desire any additional information not included in my resume, please contact me at my phone number or email address above.

Thank you in advance, and I am looking forward to hearing from you.

Sincerely,

Nam Nguyen