

# Myong Jong Shin

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## Education

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**Indiana University Bloomington** (Indiana University Graduate Assistantship, H. Crawford Graduate Top-up Fellowship)  
*Ph.D. in Economics* Sept 2016 – December 2023  
Dissertation: Three essays on model comparisons in finance and macroeconomics

**Indiana University Bloomington**  
*Master of Arts in Economics* Sept 2016 – March 2019

**Soongsil University**  
*Bachelor of Arts in Economics* (Soongsil Scholarship) March 2010 – Dec 2015

## Experience

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**JPMorgan Chase, New York City** May 2023 – Present  
*Quantitative Modeling Sr. Associate, Model Risk Governance and Review (MRGR)*

- I have reviewed machine learning (ML) models used for anti-money laundering applications within JPMorgan Chase. I have assessed the ML models for their statistical soundness and estimation assumptions.
- I have developed benchmark models around tree-based ML models and NLP models.

**Indiana University Bloomington** Sept 2018 – May 2022  
*Associate Instructor*

- I have taught undergraduate business statistics courses and graduate financial econometrics courses which include giving lectures, designing tests and assignments, and grading.

*Teaching Assistant*

- I provided recitations for advanced econometrics course for Ph.D. students.

## Research Papers

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**Empirical investigation on supervised machine learning models predicting equity risk premium (JMP)**

- Examined the predictive performance of ML (Supervised Machine Learning) models in forecasting multi-horizon firm-level equity risk premiums in the US stock market from January 1987 to December 2019 using big economic/financial data from CRSP, January 1960 to December 2019.
- Forecasted monthly, quarterly, semi-annual, and annual returns with Principal component regression, Partial least squares, LASSO, Ridge, Elastic net, and Random Forest ML models using python libraries and MATLAB.
- Evaluated models for their predictive ability using the test of Superior Predictive Ability, the Model Confidence Set, and the test of Conditional Superior Predictive Ability that evaluates forecasts conditional on a priori chosen variable indicative of the state of the US macroeconomy or US financial markets.
- Models with good predictability are different for each US industry sector. E.g., the random forest has a good out-of-sample fit for firms in *Finance, Insurance, and Real Estate* sector, but it has a bad fit for *Public Administration and Nonclassifiable* sector.

## Projects

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**Evaluation of supervised machine learning models predicting equity risk premium in South Korea**

- Examined the predictive performance of ML (Supervised Machine Learning) models in forecasting monthly firm-level equity risk premiums for the South Korea stock market.
- Data from *Worldscope* used for forecasting an extensive collection of firms to avoid survival bias. Models for forecasting and tests for evaluating were chosen, similar to JMP.
- No model has distinctively good predictability over another, and weekly and monthly price trends contribute the most to the mean decrease in I2 impurity for the random forest model.

**Test of equal predictive ability with HAR standard error for forecasting US industrial production growth and inflation**

- Investigated autoregressive distributed lag (ADL) models for their predictive ability in forecasting US economic growth and Inflation.
- Used heteroscedasticity and autocorrelation robust (HAR) standard error for the test of Equal Predictive Ability to improve the size and power of the test when the sample size is small.
- Using US monthly FRED-MD data, we see more conservative test results with fewer ADL models having better predictability than the benchmark autoregressive model.

### **Skills Summary**

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- Time-Series Econometrics, Supervised Machine Learning methods (Dimension reduction, Regularization, Ensemble Methods, Neural Net), Gradient boosting, Out-of-Sample testing, Financial and Macroeconomic Forecasting, and Cross-Validation, NLP.
- Programming: Python (NumPy, scikit-learn, pandas, TensorFlow), STATA, R, MATLAB, C/C++, MS Excel, MS word, LaTeX.
- High-performance computing (Linux) for handling big data and computationally intensive code.
- Experience using Bloomberg, DataStream, and Wharton Research Data Services.
- Language: Fluent in English (latest TOEFL 117/120) and Korean.
- Leadership experience from participating in various field training exercises, leading squads, and handling radio communications for the 30th Armored Brigade, Republic of Korea Army.