Zhendong Li

Department of Economics

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EDUCATION

Ph.D. in Economics, University at Albany, State University of New York 2026(Expected)

M.A. in Economics, University at Albany, State University of New York 2024

M.S. in Finance, University of Connecticut 2020

- Concentration on Quantitative Financial Risk Management

B.S. in Security Engineering, with honors, China University of Labor Relations 2017

RESEARCH FIELDS

Econometrics, Applied Macroeconomics, Financial Economics, Machine Learning

TEACHING INTERESTS

Principles of Economics, Intermediate Micro and Macro Economics, Econometrics, Financial Economics, AI and Machine Learning in Economics and Finance

PUBLICATIONS

"Forecasting Economic Time Series in Presence of Weak Factors: Multiple Supervised Learning-Based Approach" with Ulrich Hounyo, 2026, ***International Journal of Forecasting***, 42(2), 414-433.

WORKING PAPERS

"Supervised Mixed-Frequency Learning for Macro-Financial Forecasting When Factors are Weak" with Ulrich Hounyo (Job Market Paper)

WORK IN PROGRESS

"Inference in Supervised Group Factor Models: Applications to Macro-Financial Panel Data"

"Wild Forests for Causal Inference in Asset Pricing under Heteroskedasticity", with Ulrich Hounyo

ACADEMIC ACTIVITIES

Presentations

2026: Texas Christian University, Kutztown University of Pennsylvania

2025: New York Camp Econometrics XVX, The 2025 World Congress of the Econometric Society

2024: New York Camp Econometrics XVIII, Asian Meeting of the Econometric Society

Africa Training Workshop in Econometrics 2024

Title: Causal Machine Learning and Modelling with Big Data in Economics

Instructors: Martin Huber (University of Fribourg), Stephen Hansen (UCL)

SoFiE Financial Econometrics Summer School (Title: Climate Finance) 2023

Instructors: Stefano Giglio (Yale University), Johannes Stroebel (NYU Stern School of Business)

WORK EXPERIENCE

Instructor of Record, Department of Economics, University at Albany, SUNY

- Received the *Helen Horowitz Award* for outstanding undergraduate teaching

Intermediate Macroeconomics (Undergraduate)			
Summer 2026		(Scheduled)	Enrollment: 25
Financial Economics (Undergraduate)			
Spring 2026	Section 1	(Ongoing)	Enrollment: 20
	Section 2	(Ongoing)	Enrollment: 26
Industrial Organization (Undergraduate)			
Fall 2025	Section 1	Evaluation: 4.91/5	Enrollment: 21
	Section 2	Evaluation: 4.75/5	Enrollment: 26
Summer 2025		Evaluation: 5/5	Enrollment: 25
Economics of Development (Undergraduate)			
Winter 2026		Evaluation: 5/5	Enrollment: 25
Spring 2025		Evaluation: 4.77/5	Enrollment: 40
Winter 2025		Evaluation: 5/5	Enrollment: 26
Summer 2024		Evaluation: 4.4/5	Enrollment: 26
Winter 2024		Evaluation: 4.75/5	Enrollment: 27
Principles of Microeconomics (Undergraduate)			
Fall 2024	Section 1	Evaluation: 4.13/5	Enrollment: 45
	Section 2	Evaluation: 4/5	Enrollment: 36
Spring 2024	Section 1	Evaluation: 4.11/5	Enrollment: 45
	Section 2	Evaluation: 3.83/5	Enrollment: 48
Fall 2023	Section 1	Evaluation: 3.40/5	Enrollment: 35
	Section 2	Evaluation: 3.36/5	Enrollment: 44

Teaching Assistant, Department of Economics, University at Albany, SUNY

Econometrics and Data Analytics (Undergraduate)	Spring 2023
Financial Economics (Undergraduate)	Fall 2022, Spring 2023
Economic Surveys and Forecasting (Master)	Fall 2022
Seminar in Economic Forecasting (Master)	Spring 2022
Industrial Organization (Undergraduate)	Fall 2021, Spring 2022
Tutor for Principles of Economics, Intermediate Micro and Macro Economics (Undergraduate)	Spring 2021
Full-time Business Analyst, DIBOT Investment (Consulting Company), China	2017 - 2018
Assistant to Securities Analyst and Investment Manager, Zhongtai Securities, China (Summer Intern)	2017

HONORS AND SCHOLARSHIPS

United University Professions Individual Development Awards ($760), SUNY	2024
Graduate Student Association Professional Development Grant ($650), University at Albany, SUNY	2024

The Pong Lee Memorial Fund ($1,000), University at Albany, SUNY 2024

The Pong Lee Award for Excellence on the Third-year Paper (Ranked 1st in cohort), University at Albany, SUNY 2023

Graduate Assistantship, University at Albany, SUNY 2020-2025

All-China Federation of Trade Union Scholarship (Top 3 students in college) 2015, 2016

SKILLS

Software and able to teach: MATLAB, Python, R, SAS, STATA, Bloomberg Terminal, SQL

Certificate of Accounting Professional from China

Language: English (Fluent), Chinese (Native)

Sports: Skilled in long-distance running, long-distance swimming, and orienteering

REFERENCES

Ulrich Hounyo

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Supervised Mixed-Frequency Learning for Macro-Financial Forecasting When Factors are Weak

(with Ulrich Hounyo, Job Market Paper)

Factor-MIDAS regression models are used to forecast a target variable by extracting common factors from a large panel of high-frequency predictors using principal component analysis (PCA). While PCA mitigates the curse of dimensionality, it relies on the pervasiveness of factors, an assumption often violated in practice when weak factors are present, particularly in macro-financial forecasting. To address this, we propose and theoretically justify the application of the so-called supervised scaled principal component analysis (SsPCA) in the context of mixed-data sampling. The SsPCA integrates supervised data weighting to shrink noise components and selectively exploit relevant predictors, enhancing weak factor identification and thereby improving predictive accuracy. Simulation results indicate that SsPCA outperforms other PCA-based or supervised methods, particularly when weak factors are prevalent. In addition, applying mixed-frequency machine learning techniques such as boosting to the cleaner factors extracted by SsPCA yields further gains in predictive performance. Finally, an extensive empirical application to U.S. macro-financial forecasting provides evidence that SsPCA identifies economically meaningful predictors and improves forecasts of GDP, inflation, unemployment, asset prices, and financial market volatility.

Forecasting Economic Time Series in Presence of Weak Factors: Multiple Supervised Learning-Based Approach

(with Ulrich Hounyo, *International Journal of Forecasting,* 42(2), 414-433)

This paper proposes an innovative supervised learning technique for dimension reduction and forecasting financial and macroeconomic time series in the presence of weak factors that can undermine the effectiveness of traditional Principal Component Analysis (PCA). This approach employs double or multiple supervised learning procedures and is termed 'Supervised Scaled Principal Component Analysis' (SsPCA). Initially, each predictor is scaled using its predictive slope on the target forecast variable, giving more weight to those with stronger predictive abilities and less to those with weaker ones. Subsequently, utilizing the scaled predictors, we intelligently identify the most informative subset for prediction. This involves iterative steps of supervised selection, factor extraction through PCA, and projection. The integration of a pre-selection step, aimed at choosing 'targeted predictors' prior to executing the SsPCA procedure, especially using soft thresholding of supervised learning methods like elastic net, significantly enhances the predictive capacity of SsPCA. Additionally, incorporating the possibility of non-linear relationships between predictors and factors often leads to supplementary improvements. Through extensive Monte Carlo simulation exercises, we find that our proposed SsPCA procedure consistently outperforms standard PCA. Real-world examples involving macroeconomic and financial asset pricing forecasting further suggest that SsPCA generally exhibits superior performance.

Inference in Supervised Group Factor Models: Applications to Macro-Financial Panel Data

This paper develops inference methods for supervised group factor models with weak factors. Group factor models are well-suited to macro-financial panels because predictors are naturally organized into economically meaningful partitions such as countries, sectors, maturities, or data blocks. By exploiting within-group comovement while allowing factor strength to vary across groups, they yield interpretable structure, robustness to heterogeneity, and better forecasts when signals are localized. Traditional group factor models rely on pervasive factors and unsupervised estimation, which often fail when economically important but weak factors are present. We propose a supervised estimation procedure that combines predictor weighting and selection within the group factor framework, improving recovery of weak yet predictive signals. We establish the asymptotic properties of the supervised group factor estimators and show that they deliver consistent factor estimation and valid inference under both strong and weak factor structures. Monte Carlo experiments verify significant gains in finite samples, especially when heterogeneity across groups interacts with weak factors. Empirically, we apply the method to macro-financial panel data that combine mixed-frequency predictors. The results indicate forecasting gains across key macroeconomic and financial indicators, with improvements over existing factor-based methods.

Wild Forests for Causal Inference in Asset Pricing under Heteroskedasticity

(with Ulrich Hounyo)

This paper introduces wild forests, a causal machine learning framework for robust inference in asset pricing that remains valid under heteroskedasticity and cross-sectional dependence. Accurate inference is crucial for distinguishing genuine risk premia from statistical artifacts, yet standard empirical asset pricing tests and conventional bootstrap procedures often rely on restrictive assumptions that understate uncertainty and produce misleading evidence of factor significance. Building on recent advances in the asymptotic theory of causal forests, we extend bootstrap inference by employing the wild bootstrap at the residual level, and we establish its validity for heteroskedastic financial panels. The method yields reliable confidence intervals for conditional alphas and betas and allows systematic heterogeneity in factor premia to be examined. By combining a theoretically grounded inference procedure with direct applications to factor pricing, wild forests provides a practical tool for assessing the robustness of asset pricing models and deepens our understanding of which factors truly command a premium in financial markets. This contribution enhances both the methodological foundations and the empirical credibility of modern asset pricing research.