Yangzhuoran Fin Yang

PhD Student in Statistics
Monash University, Australia
+61 414 060 712 | Fin.Yang@monash.edu | yangzhuoranyang.com | FinYang | yangzhuoranyang | YangzhuoranY

Education

Doctor of Philosophy in Statistics — *Clayton, Australia*
Monash University — *Apr. 2020 - Present*
- Supervisors: Professor Rob J Hyndman, Professor George Athanasopoulos, Associate Professor Anastasios Panagiotelis
- Thesis: Component-based Approaches in Multivariate and Hierarchical Forecasting
- Expected July 2024 (Intermission from May 2021 to Feb 2022 due to COVID-19)

Bachelor of Commerce (Hons) in Econometrics — *Clayton, Australia*
Monash University — *Mar. 2019 - Dec. 2019*
- Thesis: Optimal Portfolio Selection via Dimensional Reduction in a Stochastic Optimal Control Setting
- GPA: 3.875; GRADE H1

Bachelor of Actuarial Science — *Clayton, Australia*
Monash University — *Jul. 2016 - Oct. 2018*
- GPA: 4; WAM: 90.323

Experience

Teaching Associate — *Clayton, Australia*
Monash University — *2017, 2019 - 2020, 2022 - Present*
- Econometrics and Business Analytics

Applied Economist — *Beijing, China*
Huohua Siwei (Online Education) — *Apr. 2021 - Jan. 2022*
- Experimental design and evaluation, data mining and R web app development

Adjunct Lecturer — *Suzhou, China*
Monash University — *Oct. 2020 - Jun. 2021*
- Suzhou Industrial Park Monash Research Institute of Science and Techology

Visiting Student — *Shanghai, China*
ShanghaiTech University SIST — *Dec. 2019 - Aug. 2020*
- Supervisor: Assistant Professor Ziping Zhao

Research Assistant — *Clayton, Australia*
Monash University — *Sep. 2017 - Aug. 2020*
- Developments of R packages and data wrangling
- Supervisors: Associate Professor Bonsoo Koo, Associate Professor Dan Zhu, and Professor Rob Hyndman

Teaching

Applied Forecasting — *Undergraduate and postgraduate*
Highest student satisfaction band; One of the top performing units in the Student Evaluation — *Sem 1 2022, Sem 1 2023*

Principles of Econometrics — *Undergraduate and postgraduate*
Highest student satisfaction band — *Sem 2 2023*

Advanced Statistical Modelling — *Undergraduate and postgraduate*
Highest student satisfaction band — *Sem 2 2022, Sem 1 2023*

Business Statistics — *Undergraduate and postgraduate*
Highest student satisfaction band; One of the top performing units in the Student Evaluation — *NOV12 2020, Sem 1 2021*

Business and Economic Statistics — *Undergraduate*
Sem 1 2019, Sem 2 2019

Job Market Paper

"Forecast Linear Augmented Projection: A free lunch to reduce forecast variance using linear combinations" by Yangzhuoran Fin Yang, Rob J. Hyndman, George Athanasopoulos and Anastasios Panagiotelis

Abstract: We introduce a novel forecast linear augmented projection (flap) method designed to reduce forecast variance of arbitrary multivariate forecasts without introducing bias. This method leverages direct and indirect forecasts of the series and thus offers a "free lunch" by requiring no additional data or information. The flap method adjusts the forecasts of multivariate time series to be consistent with the forecasts of linear combinations (components) of the series by projecting all forecasts onto the space where the linear constraints are satisfied. The forecast variance can be reduced monotonically by including more components. For a given number of components, the proposed method achieves maximum forecast variance reduction among linear projections. Substantial variance reduction is observed in simulation and two applications on the Australian domestic tourism data set and the FRED-MD data set, validating theoretical findings. Notably, forecast projection with Principal Component Analysis (PCA) as the component construction method demonstrates effective variance reduction. We observe the source of the reduction is the reduction of model misspecification error.

Publication

Yang, Y. F., and Zhao, Z. (2020), "Online Robust Reduced-Rank Regression," in 2020 IEEE 11th Sensor Array and Multichannel Signal Processing Workshop (SAM), pp. 1–5.

Working Papers

1. "Nonlinear Dynamics of Kimchi Premium" by Myung Hwan Seo, Bonsoo Koo, and Yangzhuoran Fin Yang (Under administrative revision)
2. "Forecast Multivariate Time Series using Lower Dimensional Components" by Yangzhuoran Fin Yang, Rob J. Hyndman, George Athanasopoulos and Anastasios Panagiotelis
3. "ycevo: An R Package for Yield Curve Nonparametric Estimation" jointly with Nico Purnomo, Wenying Yao and Bonsoo Koo
4. "Forecast Linear Augmented Projection in Hierarchical Forecast Reconciliation"
5. "Forecasting Multiple Time Series with One-Sided Dynamic Autoregressive Principal Components: A hybrid of Dynamic Factor Model and Vector Autoregression"

Conferences

Jun. 2023	**43rd International Symposium on Forecasting**	*Charlottesville, USA*
Dec. 2020	**Doctoral Research Colloquium, Monash Business School**	*Virtual*
Jun. 2020	**11th IEEE Sensor Array and Multichannel Signal Processing Workshop**	*Virtual*

Awards, Grants and Scholarships

- 2023 International Symposium on Forecasting Travel Grant
- 2023 Monash Graduate Research Travel Grant
- 2020 - 2024 Monash Business School Co-funded Graduate Research Scholarship
- 2020 - 2024 Monash Graduate Scholarship
- 2020 IEEE Sensor Array and Multichannel Signal Processing Workshop Best Student Paper Award Finalist
- 2019 Monash Business School Dean's Honour
- 2019 Monash University Econometrics Honours Memorial Scholarship
- 2018 Monash Business School Prize for the Top Achieving Student in Actuarial Science (Undergraduate)
- 2018 Monash University Medal for Undergraduate Academic Excellence
- 2018 Monash Business School Dean's Honour
- 2018 Monash Business School Student Excellence Award in recognition of exceptional academic excellence (Business analytics, Modelling in finance and insurance, Applied forecasting for business and economics)
- 2018 The International Institute of Forecasters Student Forecasting Award offered by Monash University Applied Forecasting for Business and Economics
- 2017 Monash Business School Student Excellence Award in recognition of exceptional academic excellence (Statistical Thinking, Principles of Econometrics, Contingencies in insurance and pensions)

Softwares

1. Hyndman, R. J., Akram, M., Bergmeir, C., & O'Hara-Wild, M. (2018). *Mcomp: Data from the m-competitions* (Version 2.8) [Computer software]. https://CRAN.R-project.org/package=Mcomp
2. Yang, Y. F., & Zhao, Z. (2020). *RRRR: Online robust reduced-rank regression estimation* (Version 1.1.0) [Computer software]. https://CRAN.R-project.org/package=RRRR
3. Hyndman, R. J., & Yang, Y. F. (2019). *compenginets: Time series from http://www.comp-engine.org/timeseries/* (Version 0.1) [Computer software]. https://github.com/robjhyndman/compenginets
4. Hyndman, R. J. (2019). *demography: Forecasting mortality, fertility, migration and population data* (Version 1.22) [Computer software]. https://CRAN.R-project.org/package=demography
5. Yang, Y. F. (2024). *flap: Forecast linear augmented projection* (Version 0.0.0.9000) [Computer software]. https://github.com/FinYang/flap
6. Yang, Y. F. (2020). *lazybar: Progress bar with remaining time forecast method* (Version 0.1.0) [Computer software]. https://CRAN.R-project.org/package=lazybar
7. Yang, Y. F. (2024). *lazyparser: Command line r-flavored argument parser* (Version 0.1.0) [Computer software]. https://github.com/FinYang/lazyparser
8. Yang, Y. F. (2020). *lazytype: Functions and addins to save keystrokes and clicks* (Version 0.0.0.9000) [Computer software]. https://pkg.yangzhuoranyang.com/lazytype/
9. O'Hara-Wild, M., & Yang, Y. F. (2024). *roam: Remote objects with active-binding magic* (Version 0.0.0.9000) [Computer software].
10. Hyndman, R. J. (2018). *tscompdata: Time series data from various forecasting competitions* (Version 0.0.1) [Computer software]. https://github.com/robjhyndman/tscompdata
11. Hyndman, R. J., & Yang, Y. F. (2020). *tsdl: Time series data library* (Version 0.1.0) [Computer software]. https://finyang.github.io/tsdl/
12. Hyndman, R. J., Kang, Y., Montero-Manso, P., Talagala, T., Wang, E., Yang, Y. F., O'Hara-Wild, M., Taieb, S. B., Hanqing, C., Lake, D. K., Laptev, N., & Moorman, J. R. (2020). *tsfeatures: Time series feature extraction* (Version 1.0.2) [Computer software]. https://CRAN.R-project.org/package=tsfeatures
13. Koo, B., Tomasetti, N., Goh, K.-Y., & Yang, Y. F. (2022). *ycevo: Nonparametric estimation of the yield curve evolution* (Version 0.1.2) [Computer software]. https://CRAN.R-project.org/package=ycevo

Referees

Professor Rob J Hyndman — *Monash University*

Department of Econometrics & Business Statistics — *Clayton, Australia*

- Email: Rob.Hyndman@monash.edu

Professor George Athanasopoulos — *Monash University*

Department of Econometrics & Business Statistics — *Clayton, Australia*

- Email: George.Athanasopoulos@monash.edu

Associate Professor Anastasios Panagiotelis — *University of Sydney Business School*

Discipline of Business Analytics — *Darlington, Australia*

- Email: Anastasios.Panagiotelis@sydney.edu.au