

Puwasala Gamakumara

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PROFESSIONAL SUMMARY

Qualified data scientist who is showing a passion towards data, by recognising underline data patterns, visualising, modeling and forecasting. Ability to quickly grasp the problem of interest, seek solutions deploying the analytical skills and deliver high quality insight to drive the decision-making process.

CAREER OBJECTIVE

Seeking a challenging opportunity in the sphere of data science which will best use my existing skills and potential to make a continuous contribution to a reputed organization enabling further personal and professional development.

EDUCATION

- **PhD in Mathematics and Statistics** - Department of Econometrics and Business Statistics, Monash University (2/2016 – 03/2020)

Research topic : Probabilistic Forecast Reconciliation: Theory and Applications

Summary : A collection of multiple time series with an inherent aggregation structure is referred to as a hierarchical time series. For such time series, it is important to have forecasts that adhere to the aggregation constraints across the hierarchy. That is, aggregates of the forecasts at lower levels should be equal to the forecasts at upper levels of the hierarchy. Forecasts with this property are referred to as coherent forecasts. The forecasts that are generated by modelling each series of the hierarchy, but ignoring the aggregate constraints are referred to as base forecasts. Base forecasts are often incoherent unless they are generated from very simple models such as naïve methods. The process that involves revising the base forecasts so that they become coherent is known as forecast reconciliation. Although there is a substantial literature on point forecast reconciliation for hierarchical time series, the focus on probabilistic forecasting is limited. This thesis attempts to address this gap by extending the idea of coherency and reconciliation into the probabilistic framework.

Supervisors: Professor. Rob J Hyndman, Professor. George Athanasopoulos and Associate Professor. Anastasios Panagiotelis

- **B.Sc. (Hons) Specialised in Statistics** – University of Colombo, Sri Lanka (09/2010 – 02/2015)

PUBLICATIONS & WORKING PAPERS

- Athanasopoulos, G., **Gamakumara, P.**, Panagiotelis, A., Hyndman, R. J., Affan, M. (2019). **“Hierarchical Forecasting”**. In: *Macroeconomic Forecasting in the Era of Big Data*. Ed. By Peter Fuleky. Springer Advanced Studies in Theoretical and Applied Econometrics series: Springer.
- Panagiotelis, A., Athanasopoulos, G., **Gamakumara, P.**, Hyndman, R. J., (2019). **“Forecast reconciliation A geometric view with new insights on bias correction”**. Department of Econometrics and Business Statistics Working Paper Series 18/19. (Submitted to the International Journal of Forecasting).

CONFERENCE PROCEEDINGS

- **Gamakumara, P., Panagiotelis, A., Athanasopoulos, G., & Hyndman, R. J. (2019, July). "Probabilistic Hierarchical Reconciliation via a Non-parametric Bootstrap Approach". 39th International Symposium on Forecasting.** Thessaloniki.
- **Gamakumara, P., Panagiotelis, A., Athanasopoulos, G., & Hyndman, R. J. (2018, July). "Probabilistic Forecasts in Hierarchical Time Series". 2nd International Conference on Econometrics and Statistics.** Hong Kong.
- **Gamakumara, P., Hyndman, R. J., Athanasopoulos, G., & Panagiotelis, A. (2017, July). "Probabilistic Forecasts in Hierarchical Time Series". 37th International Symposium on Forecasting.** Cairns.
- **Gamakumara, C. P., & Thilakaratne, C. (2015, November). "Influence of Macroeconomic and Monetary Policy Variables on Volatility of All Share Price Index". Peradeniya University International Research Sessions (IPURSE 2015) (p. 290).** University of Peradeniya.

RESEARCH EXPERIENCE



**MONASH
BUSINESS
SCHOOL**

**Department of Econometrics and Business Statistics, Monash University and
ARC Center of Excellence for Mathematical and Statistical Frontiers
04/2020 to PRESENT**



RESEARCH FELLOW

- Working on advance anomaly detection in water-quality measures



**Smart Pricing - eCommerce
Wal-Mart Labs, San Bruno
01/2020 to 03/2020**

DATA SCIENTIST - INTERN

- Working on two projects with the Smart Pricing team
 - Project 1: Forecasting seasonal fashion sales – improving the current forecasting model with approximately 30% accuracy.
 - Project 2: Implementing hierarchical forecasting methods to forecast store sales data.



**MONASH
BUSINESS
SCHOOL**

**Department of Econometrics and Business Statistics
Monash Business School
10/2019 to 12/2019
RESEARCH ASSISTANT**

- Working papers:

Gamakumara, P., Panagiotelis, A., Athanasopoulos, G., Hyndman, R. J., (2019). "Probabilistic Forecast Reconciliation".



PepperCube Consultants
06/2012 to 02/2015

TRAINEE RESEARCH EXECUTIVE

Pepper Cube is a recognized market research company in Sri Lanka pioneering in brand marketing, trade marketing and economic modelling research consultants for various businesses.

- Attending client meetings and interacting with clients from project inception to completion
- Preparation of client research proposal (power point and word) – background and understanding of scope of research, business/ marketing problem, sample design, target respondent selection, data quality control, analysis parameters, time frame and investment
- Development of data collection materials – questionnaire preparation and translations, piloting etc.
- Construction of data analysis plan and carrying out the data analysis
- Preparation of Power Point presentation on findings along with recommendations
- Attending the client presentations as and when required

TEACHING EXPERIENCE



**MONASH
BUSINESS
SCHOOL**

Department of Econometrics and Business Statistics
Monash Business School
02/2017 to 11/2019

TEACHING ASSOCIATE

- Conducted tutorials and lab sessions for following subjects:
 - Applied Forecasting for Business and Economics
 - Advance Statistical Modelling
 - Data Modelling and Computing



Department of Statistics
University of Colombo
03/2015 to 01/2016

TEMPORARY ASSISTANT LECTURER

- Lectures conducted in `Time Series and Forecasting`
- Tutorials conducted in `Operation Research`

- Practical sessions conducted in:
Exploratory Data Analysis
Business Statistics
Statistical Computing
- Trainer for workshops on SPSS as external short course programs
- Statistical consultation for internal and external parties

SYSTEM SKILLS

- Proficiency in analytical softwares – R, Python, Matlab, SPSS and MINITAB
- Version control using Git and Github
- LaTeX for technical and scientific documentation
- Proficiency in MS Office packaged including advanced Excel and PowerPoint