# European Seminar on Bayesian Econometrics 2025

ESOBE

## Scientific Program

## University of Melbourne

## 25 – 28 August


THE UNIVERSITY OF MELBOURNE

Support from the Faculty of Business and Economics, the Melbourne Business School, the Department of Econometrics and Business Statistics at Monash University, and the Economics, Finance and Business Section of ISBA, is gratefully acknowledged.

# Program Overview

## Monday August 25

09.00 – 17.10: (Optional) Masterclass on Neural Methods for Amortised Inference

## Tuesday August 26

| | |
|---|---|
| 8.30 – 9.00 | Registration |
| 9.00 – 9.10 | Acknowledgement of Country and Welcome |
| 9.10 – 10.00 | Keynote Speaker: Christiane Baumeister |
| 10.00 – 10.15 | Coffee Break |
| 10.15 – 11.45 | Young Researcher Contributed Session |
| 11.45 – 12.20 | Senior Researcher Contributed: Mike West |
| 12.20 – 13.30 | Buffet Lunch |
| 13.30 – 15.00 | New Bayesian Methods Contributed Session |
| 15.00 – 15.30 | Coffee Break |
| 15.30 – 16.30 | Micro-Econometrics Contributed Session |
| 16.30 – 17.15 | Invited Speaker: Dan Zhu |
| 18.00 – 20.30 | Conference Dinner at University House |

## Wednesday August 27

| | |
|---|---|
| 8.40 – 9.30 | Keynote Speaker: Dimitris Korobilis |
| 9.30 – 10.30 | Causal Inference Contributed Session |
| 10.30 – 11.00 | Coffee Break |
| 11.00 – 11.45 | Invited Speaker: David Frazier |
| 11.45 – 12.45 | Quantile Models Contributed Session |
| 12.45 – 14.15 | Buffet Lunch and **Poster Session** |
| 14.15 – 15.15 | Macro-Econometrics Contributed Session |
| 15.15 – 15.45 | Coffee Break |
| 15.45 – 16.45 | Bayesian Multivariate Time Series Contributed Session |
| 16.45 – 17.35 | Keynote Speaker: Howard Bondell |

## Thursday August 28

09.00 – 12.15: (Optional) Masterclass on Advances in Bayesian Finite Mixture Modeling

12.30 – 17:00: (Optional) Social Event

**Presentation Lengths:**

- Keynote Speakers: 45 mins + 5 mins Q&A
- Invited Speakers: 40 mins + 5 mins Q&A
- Senior Contributed Speaker: 30 mins + 5 mins Q&A.
- Contributed Speakers: 25 mins + 5 mins Q&A

# Monday August 25

## Masterclass 1: Neural Methods for Amortised Inference

**Instructor: A/Prof. Andrew Zammit Mangion, School of Mathematics and Applied Statistics, University of Wollongong**

**Schedule**:

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|---|---|
| 09:00-09:45: | Presentation: Introduction to neural networks for classification and regression |
| 09:45-10:30: | Lab: Implementing a simple neural network for regression |
| 10:30-11:00: | Break |
| 11:00-11:45: | Presentation: Decision theory, amortisation, and neural Bayes estimation |
| 11:45-12:30: | Lab: Implementing a neural Bayes estimator from scratch for a simple model |
| 12:30-13:30: | Lunch |
| 13:30-14:15: | Presentation: Amortised Bayesian inference |
| 14:15-15:00: | Lab: Using BayesFlow to obtain full posterior distributions |
| 15:00-15:30: | Break |
| 15:30-16:15: | Presentation: Dealing with missing or irregularly spaced data |
| 16:15-17:00: | Lab: Using NeuralEstimators for a spatial missing data problem |
| 17:00-17:10: | Conclusion |

# Tuesday August 26

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|---|---|
| 8.30 – 9.00 | **Registration** |
| 9.00 – 9.10 | **Acknowledgement of Country and Welcome**<br><br>Liana Jacobi (Organizing Committee)<br>Paul Jensen (Deputy Dean, Faculty of Business and Economics) |
| 9.10 – 10.00 | **Keynote Speaker** (Chair: Rodney Strachan)<br><br>Christiane Baumeister: Oil, Inflation Expectations, and Household Characteristics: A Nonlinear Heterogeneous Agent VAR Approach |
| 10.00 – 10.15 | **Coffee Break** |
| 10.15 – 11.45 | **Young Researcher Contributed Session (**Chair: Tomasz Wozniak)<br><br>Ping Wu: U.S. Economy and Global Stock Markets: Insights from a Distributional Approach<br>Alexander Mozdzen: Bayesian nonparametric partial clustering: Quantifying the effectiveness of agricultural subsidies across Europe<br>Igor Ferreira: Intraday Crude Oil Volatility: Assessing the Impact of Economic Announcements and Mixed-frequency Data |
| 11.45 – 12.20 | **Senior Researcher Contributed** (Chair: Michael Smith)<br><br>Mike West: Scenario Synthesis and Macroeconomic Risk |
| 12.20 – 13.30 | **Buffet Lunch** |
| 13.30 – 15.00 | **New Bayesian Methods Contributed Session** (Chair: Liana Jacobi)<br><br>Weichang Yu: Cutting Feedback in Misspecified Copula Models<br>Xuan Vu: Variational inference for a Bayesian Dynamic nonparametric model<br>Nikolas Kuschnig: Networks in Space — Spillovers in Amazon Deforestation |
| 15.00 – 15.30 | **Coffee Break** |
| 15.30 – 16.30 | **Micro-Econometrics Contributed Session** (Chair: Sam Tsiaplias)<br><br>Annika Camehl: Micro-based SVAR Identification<br>Eoghan O'Neill: Type 2 Tobit Sample Selection Models with Bayesian Additive Regression Trees |
| 16.30 – 17.15 | **Invited Speaker** (Chair: Jamie Cross)<br><br>Dan Zhu: Inflation Target at Risk: A Time-varying Parameter Distributional Regression |
| 18.00 – 20.30 | **Conference Dinner at University House** |

## Wednesday August 27

| | |
|---|---|
| 8.40 – 9.30 | **Keynote Speaker** (Chair: Michael Smith)<br><br>Dimitris Korobilis: Oil market extremes and their unequal effects on the economy: A Quantile VAR Analysis |
| 9.30 – 10.30 | **Causal Inference Contributed Session** (Chair: Yong Song)<br><br>Ivan Jeliazkov: The Role of Heteroskedasticity in Observational Studies of Causal Effects<br>Hedibert Lopes: Learning Conditional Average Treatment Effects in Regression Discontinuity Designs using Bayesian Additive Regression Trees |
| 10.30 – 11.00 | **Coffee Break** |
| 11.00 – 11.45 | **Invited Speaker** (Chair: Ole Maneesoonthorn)<br><br>David Frazier: Generalized Bayesian methods for predictive inference |
| 11.45 – 12.45 | **Quantile Models Contributed Session** (Chair: Jamie Cross)<br><br>Aubrey Poon: A Quantile Nelson-Siegel Model<br>Yong Song: Bayesian inference for dynamic spatial quantile models with interactive effects |
| 12.45 – 14.15 | **Buffet Lunch and **Poster Session**** |
| 14.15 – 15.15 | **Macro-Econometrics Contributed Session** (Chair: Rodney Strachan)<br><br>Saeed Zaman: Oil Price Fluctuations and US Banks<br>Ben Wong: How important is global r-star for open economies? |
| 15.15 – 15.45 | **Coffee Break** |
| 15.45 – 16.45 | **Bayesian Multivariate Time Series Contributed Session** (Chair: Tomasz Wozniak)<br><br>Sylvia Kaufmann: Dynamic factor models with common (drifting) stochastic trends<br>John Maheu: Equity vs Bonds, What Happened During COVID-19? A Bayesian Nonparametric Analysis |
| 16.45 – 17.35 | **Keynote Speaker** (Chair: Michael Smith)<br><br>Howard Bondell: Density Ratio Estimation, Importance Sampling, and Covariate Shift via Information Geometry |

# List of Posters

Chen, Yaohan (School of Big Data and Statistics, Anhui University) **A Class of Bayesian Approach for Modeling Spot Volatility in High Frequency**

Kronenberg, Philipp (KOF Swiss Economic Institute ETH Zurich) **A High-Frequency GDP Indicator for Switzerland**

Grün, Bettina (WU Vienna) **Finding Cluster Distributions Using CliPS - Clustering in the Parameter Space**

Zhang, Xibin (Monash University) **A Bayesian stochastic frontier model with persistent and transient inefficiencies**

Jewson, Jack (Monash University) **Graphical model inference with external network data**

Knaus, Peter (Vienna University of Economics and Business) **Flexible yet Sparse Bayesian Survival Models with Time-Varying Coefficients and Unobserved Heterogeneity**

Seiler, Pascal (ETH Zurich) **Nonlinearities of Monetary Policy across States of Price Rigidity**

Kim, Young Geun (Yonsei University) **Bayesian Modeling and Forecasting of High-Dimensional Long-Range Dependent Time Series**

Deng, Lin (Melbourne Business School, University of Melbourne) **Large Skew-t Copula Models and Asymmetric Dependence in Intraday Equity Returns**

Fan, Zheng (University of Melbourne) **Consolidating Dynamic Shrinkage and Selection and Answering to the Meese–Rogoff Puzzle**

Ferreira Batista-Martins, Igor (Örebro University) **Stochastic Dynamic Correlations with Exogenous Shifts: Connecting Macroeconomic Events and Financial Risk**

Fu, Yu (Melbourne Business School, The University of Melbourne) **Vector Copula Variational Inference and Dependent Block Posterior Approximations**

Konrad, Lucas Darius (Vienna University of Economics and Business) **The Approximately Exact Generalized Moment Prior**

Sun, Tao (University of Melbourne) **Factor Analysis of Bayesian Bundle Choice Models with Endogeneity**

Sun, Yuru (Monash University) **Jump Modelling with Dirichlet Process Mixture**

Zhang, Weiben (Melbourne Business School, University of Melbourne) **Natural gradient hybrid variational inference with application to deep mixed models**

Kuh, Swen (RMIT University) **The Impact of a Regional Train Fare Cap Policy on Train Patronage**

# Thursday August 28

## Masterclass 2: Advances in Bayesian Finite Mixture Modelling

**Instructor: Associate Professor Bettina Grün, Institute for Statistics and Mathematics, WU Vienna.**

**Description:** Mixture models are a useful statistical model class for clustering and density approximation. In the Bayesian framework, mixture models require the specification of suitable priors in addition to the data model. These priors allow to avoid spurious results and provide a principled way to define cluster shapes and a preference for specific cluster solutions. A generic model estimation scheme for finite mixtures with a fixed number of components is available using Markov chain Monte Carlo (MCMC) sampling with data augmentation. The posterior allows to assess uncertainty in a comprehensive way, but component-specific posterior inference requires resolving the label switching issue.

We will discuss suitable specification, estimation and inference of the finite mixture model if the number of components is assumed to be known. We then explain suitable strategies for fitting Bayesian finite mixture models when the number of components is not known. We will consider different mixture models depending on the inclusion of covariates for the component weights or the component distributions. We will illustrate all steps required to perform Bayesian finite mixture modeling on data examples. Suitable prior specification, estimation using MCMC and posterior inference are discussed for these examples assuming the number of components to be known as well as unknown.

# Locations and Maps

**Masterclasses** (on Monday and Thursday)

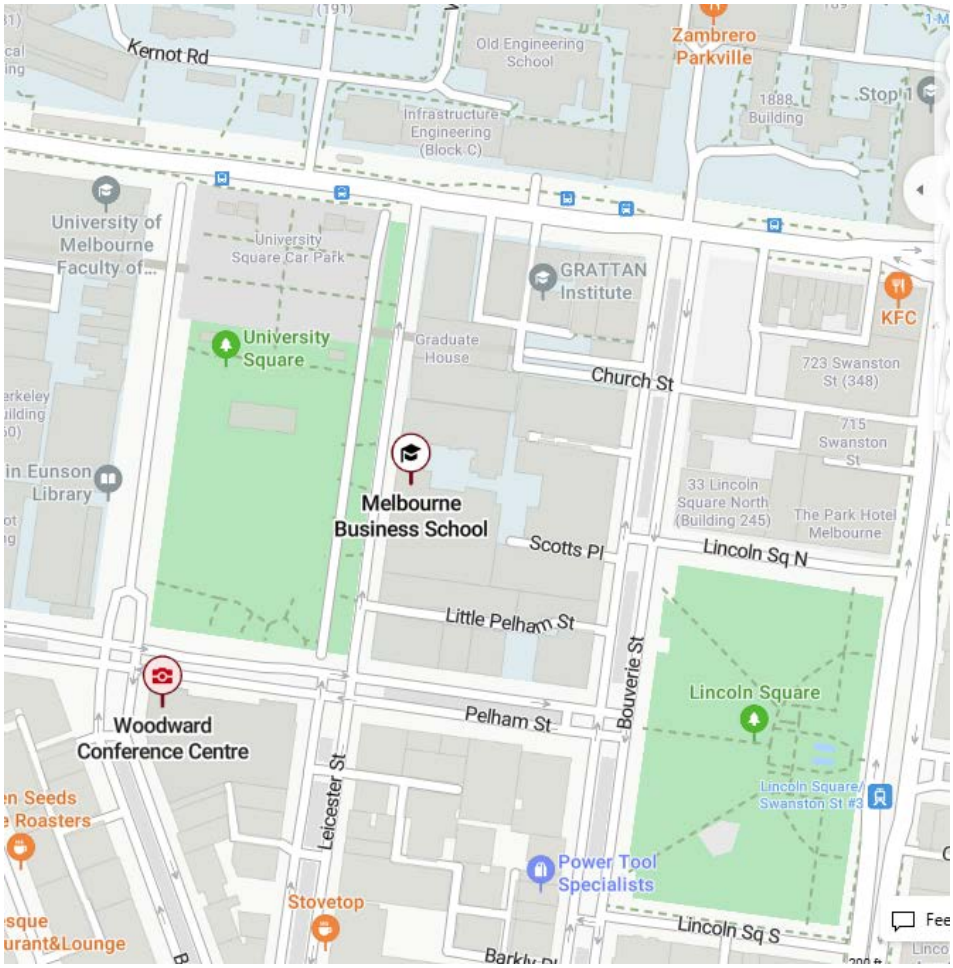
These will be held in **lecture room LT4** in the Melbourne Business School (MBS) building. Enter by the main entrance of the MBS building on **200 Leicester Street, Carlton**, and then follow signage.

**Scientific Program** (on Tuesday and Wednesday)

This will be held in the Woodward Conference Centre. This is on the 10th floor of the Law Building at 185 Pelham Street, Carlton. The poster sessions, buffet lunches and coffee breaks will all be onsite here.

**Conference Dinner** (on Tuesday evening)

This will be held at University House, which is a 10 min walk from the Woodward Conference Centre.




Location of both the Woodward Conference Centre and the Melbourne Business School are marked. Enter the Woodward CC from Pelham Street. Enter Melbourne BS from Leicester Street.

**Getting to and from the Carlton Campus**

If you are staying in the city centre of Melbourne (typically called the CBD) then the simplest way is to use the tram system. Take any tram heading north on **Swanston Street** with the destination "Melbourne University" or the number 1 or 16 (they all head the same way). The university is just outside the free travel zone, so you will need to **"swipe on" with a myki card** (more on this below), but do not need to swipe off. Exit the stop number 3 (Lincoln Square) and then head westward across Lincoln Square to Pelham street. Be careful when exiting the tram, as Swanston St. has a lot of bicycle and vehicle traffic.

Before your first trip, you will need to purchase a myki card with (say) $20 of credit from hotel, newsagency or any other retailer with myki signage outside**. *You cannot simply use your debit card, nor can you buy tickets on the tram*.**

Return trips just reverse the process.

If you are fit and keen for the exercise, it is about 1.5km walk from the centre Melbourne CBD to the Carlton Campus.

Uber is the dominant rideshare provider in Melbourne, and there are also taxi ranks in the CBD.