Agnieszka Borowska

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Contact Information

University of Glasgow
School of Mathematics and Statistics
University Place
Glasgow G12 8QQ

E-mail: Agnieszka.Borowska@glasgow.ac.uk
Website: aborowska.github.io

Research Interests

Bayesian Methods, State Space Models, Sequential Monte Carlo, Simulation Techniques, Rare Events Estimation

Current Position

University of Glasgow, UK, from May 2018
Postdoctoral researcher in Statistics (with Prof. Dirk Husmeier),
Position within the SofTMech Centre (an EPSRC centre for Multiscale Soft Tissue Mechanics)

Education

VU Amsterdam, The Netherlands, Sep. 2015 – Spring 2019 (expected)
Ph.D. in Econometrics,
Supervisors: Prof. Siem Jan Koopman and Dr Lennart. Hoogerheide

University of Edinburgh, UK, Apr. 2017 – Jun. 2017
Postgraduate Research Visit at the School of Mathematics,
Host Supervisor: Prof. Ruth King

Tinbergen Institute and **VU Amsterdam**, The Netherlands Sep. 2013 – Aug. 2015
M.Phil., *major:* Econometrics, *minor:* Macroeconomics

University of Warsaw, Poland Oct. 2009 – Sep. 2013
Faculty of Mathematics, Informatics and Mechanics
B.Sc. in Mathematics, *minor:* Probability Theory

University of Göttingen, Germany Sep. 2010 – Feb. 2011
Faculty of Economics and Business Administration
M.Sc. programme, exchange within the Erasmus Programme

Warsaw School of Economics, Poland Oct. 2009 – Jan. 2012
M.Sc. in Economics, *major:* Macroeconomic Analysis

Warsaw School of Economics, Poland Oct. 2006 – Jul. 2009
B.Sc. in Economics, *major:* Macroeconomic Analysis,
minor: Computational and Optimisation Methods in Decision Making

Publications

Time-varying Combinations of Bayesian Dynamic Models and Equity Momentum Strategies,
with Nalan Baştürk, Stefano Grassi, Lennart Hoogerheide and Herman K. van Dijk,
Journal of Econometrics, 2018

Bayesian Dynamic Modeling of High-Frequency Integer Price Changes,
with István Barra and Siem Jan Koopman,
Journal of Financial Econometrics, 2018

Submitted and under revision

Partially Censored Posterior for Robust and Efficient Risk Evaluation,
with Lennart Hoogerheide, Siem Jan Koopman and Herman K. van Dijk,
revision for *Journal of Econometrics*

Bayesian Risk Forecasting for Long Horizons,
with Lennart Hoogerheide and Siem Jan Koopman,

Ongoing Research

Gaussian Processes and ABC for Statistical Inference in Cell Migration SDE Systems,
with Diana Giurghita and Dirk Husmeier

Bayesian Optimisation for Left Ventricle Biomechanical Models,
with Dirk Husmeier, Hao Gao and Xiaoyu Luo

Semi-Complete Data Augmentation,
with Ruth King

Bayesian Risk Evaluation for State-Space Models,
with Lennart Hoogerheide and Siem Jan Koopman

Conference and Seminar Presentations

Cside 2018 Conference, Glasgow, UK — 26 Nov. 2018

2nd Joint Liverpool-Glasgow Maths Healthcare Centre Meeting,
Liverpool, UK — 30 Aug. 2018

4th Bayesian Young Statisticians Meeting, Warwick, UK — 02 – 03 Jul. 2018

1st Bayes Comp, Barcelona, Spain — 26– 28 Mar. 2018

10th International Conference of the ERCIM WG on Computational and Methodological Statistics, London, UK — 16– 18 Dec. 2017

8th European Seminar on Bayesian Econometrics,
Maastricht, The Netherlands — 26– 27 Oct. 2017

Sequential Monte Carlo Workshop 2017, Uppsala, Sweden — 30 Aug. – 1 Sep. 2017

1st International Conference on Econometrics and Statistics,
Hong Kong — 15–17 Jun. 2017

Statistics Seminar Series of the School of Mathematics,
Edinburgh, UK — 19 May 2017

10th International Conference on Computational and Financial Econometrics,
Seville, Spain — 9–11 Dec. 2016

3rd Bayesian Young Statisticians Meeting, Florence, Italy — 20–21 Jun. 2016

11th Netherlands Econometric Study Group Meeting, Leuven, Belgium — 17–18 Jun. 2016

TI Ph.D. Lunch Seminar, Amsterdam, The Netherlands — 24 May 2016

Econometrics Brown Bag Seminar, Amsterdam, The Netherlands — 21 Jan. 2016

Teaching Experience

University of Glasgow, UK
Honours and MSc Projects supervision (Statistics) — 2018/2019
Co-supervision with Dirk Husmeier

VU Amsterdam, the Netherlands
Econometrics II (B.Sc. course) — Feb. – Mar. 2017
Teaching Assistant of Lennart Hoogerheide

Business Mathematics (B.Sc. course, evaluation: 3.8/5) — Sep. – Oct. 2016

Business Statistics (B.Sc. course, evaluation: 4.1/5) — Feb. – Mar. 2016

Tinbergen Institute, Amsterdam, the Netherlands
Advanced Econometrics II (M.Phil. course, evaluation: 4.1/5) — Jan. – Feb. 2015
Teaching Assistant of Kees Jan van Garderen

Measure Theory and Stochastic Processes (M.Phil. course, evaluation: 4.2/5) — Sep. – Oct. 2014
Teaching Assistant of Peter J. C. Spreij

Professional and Research Experience

University of Warsaw, Poland
Researcher — Feb. 2012 – Sep. 2014
Pension system reform modelling within the OLG framework under time inconsistency; welfare analysis of various fiscal closures; numerical model solving in Fortran; paper writing and editing.

Civil Development Forum, Warsaw, Poland
Internship in the Analytical Department — Jul. 2010
Analysis of the privatisation process in Poland; comparison of fiscal policy rules in selected EU countries; development of a database on fiscal stability reforms in the EU.

National Bank of Poland, Warsaw, Poland
Internship in the Economics Institute, Monetary Policy Strategy Bureau — Aug. 2009
Comparison and evaluation of the communication tools and institutional solutions implemented in selected central banks worldwide.

Additional Courses and Trainings

Scalable Bayesian Inference
Edinburgh, UK — Jun. 2018
scalable algorithms for large datasets (embarrassingly parallel MCMC, approximate MCMC), scalable Bayesian methods for very high-dimensional data analysis

Workshop on Machine Learning Models and Methods for Econometricians
Maastricht, The Netherlands — Oct. 2017
Gaussian Processes, Distributed and Subsampling MCMC, Variational Bayes, Deep Learning

Intensive PhD level course on Sequential Monte Carlo Methods
Uppsala University, Sweden — Aug. 2017
Particle Markov Chain Monte Carlo, High-dimensional filtering, SMC for probabilistic graphical models and probabilistic programming

Reading Group on Bayesian Nonparametrics
University of Edinburgh, UK — May – Jun. 2017
Introduction to Dirichlet process and their mixtures, Bayesian nonparamteric regression

Course on High Performance Computing
VU Amsterdam, The Netherlands — Oct. 2016
Basics of Unix and cluster computing, Hadoop and data analytics, GPU programming, HPC cloud

Summer School in Applied Macroeconomics
University of Salento, Lecce, Italy — Jul. 2012
Programming in Matlab, VAR for monetary policy, state space models and the Kalman Filter

Scholarships and Awards

Cside 2018 winners' prize
(Model 3 and Additional Challenge), 250 GBP — Nov. 2018

ISBA travel award for BAYSM 2018 meeting
BAYSM 2018 organizing committee, 400 USD — Apr. 2018

SMC2017 scholarship to attend the workshop and the intensive course
SMC2017 organizing committee, 15,000 SEK — Aug. 2017

Tinbergen Institute merit-based scholarship
Tinbergen Institute, full scholarship, first and second year, 30,000 EUR — Sep. 2013 – Aug. 2015

Student Exchange Scholarship
Warsaw School of Economics, the LLP Erasmus — Sep. 2010 – Feb. 2011

Scholarship for excellent academic achievements
Warsaw School of Economics — Oct. 2007 – Sep. 2010

Computer Skills

Strong experience in MATLAB, Fortran, R

Experience with Python, C, PHP, Visual Basic, SQL, BUGS/JAGS

Familiarity with EViews, Stata, SPSS

Other: LaTeX, Linux, GitHub, SVN

Foreign Languages

Polish (native), English (fluent), German (advanced),
Russian (intermediate), French (basic), Dutch (basic)

Referees

Prof. Siem Jan Koopman
The Department of Econometrics
Vrije Universiteit Amsterdam, e-mail: s.j.koopman@vu.nl

Dr Lennart Hoogerheide
The Department of Econometrics
Vrije Universiteit Amsterdam, e-mail: l.f.hoogerheide@vu.nl

Prof. Ruth King
The School of Mathematics,
The University of Edinburgh, e-mail: ruth.king@ed.ac.uk

Prof. Herman K. van Dijk
Econometric Institute,
Erasmus University Rotterdam, e-mail: hkvandijk@ese.eur.nl