Dr. Haeran Cho

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Employment

September 2013 – present	**Lecturer in Statistics**, School of Mathematics, University of Bristol, UK.
June 2010 – August 2013	**Post-doctoral research officer**, Department of Statistics, London School of Economics, UK. • Worked with Prof. Qiwei Yao. • Topics: Daily electricity demand forecasting, high-dimensional time series modelling.

Education

October 2007 – October 2010	**PhD in Statistics**, Department of Statistics, London School of Economics, UK. *Transferred from the University of Bristol after 2 years following my supervisor's move.* • Supervisor: Prof. Piotr Fryzlewicz. • Dissertation: Sparse modelling and estimation for nonstationary time series and high-dimensional data.
2003 – 2007	**BSc in Statistics**, Department of Statistics, Seoul National University, South Korea. • GPA 3.85 out of 4.3 (percentage equivalent: 90%).

Awards and honours

2013	**Royal Statistical Society Research Prize**.
2009 – 2010	**New Futures Fund Scholarship**, **Department of Statistics Studentship**; London School of Economics.
2007 – 2009	**Overseas Research Student Award**; University of Bristol Postgraduate Scholarships and Higher Education Funding Council for England.
2003 – 2007	**Dooeul Scholarship**; Dooeul Scholarship Foundation. Given to female students from selected universities in Korea for strong academic performance, covered university tuition fees.

Research

Research funding

June 2016 – November 2017	**Engineering and Physical Sciences Research Council First Grant** (EP/N024435/1). • Title: Change-point detection for high-dimensional time series with nonstationarities.
2016	**Travel grant**; International Society for Non-parametric Statistics.

	Financial support to present a paper at the 3rd ISNPS in Avignon, France.
2015	**ICFE and CMStatistics networks & CRoNoS Award**; Elsevier.
	Financial support to present a paper at CMStatistics 2015 in London, UK.
2015	**IMS travel award**; Institute of Mathematical Statistics.
	Financial support to present a paper at the JSM 2015 in Seattle, USA.
2014	**IMS travel award**; Institute of Mathematical Statistics.
	Financial support to present a paper at the IMS-APRM 2014 in Taipei, Taiwan.
2010	**Laha travel award**; Institute of Mathematical Statistics.
	Financial support to present a paper at the IMS 2010 Annual Meeting in Gothenburg, Sweden.

Refereed journal papers

H. Cho (2016) A test for second-order stationarity of time series based on unsystematic sub-samples. *Stat*, **5**: 262–277.

H. Cho (2016) Change-point detection in panel data via double CUSUM statistic. *Electronic Journal of Statistics*, **10**: 2000–2038.

H. Cho and P. Fryzlewicz (2015) Multiple change-point detection for high-dimensional time series via Sparsified Binary Segmentation. *Journal of the Royal Statistical Society Series B*, **77**: 475–507.

H. Cho, Y. Goude, X. Brossat and Q. Yao (2013) Modelling and forecasting daily electricity load curves: a hybrid approach. *Journal of the American Statistical Association*, **108**: 7–21.

O. Christodoulaki, **H. Cho** and P. Fryzlewicz (2012) A reflection of history: fluctuations in Greek sovereign risk between 1914 and 1929. *European Review of Economic History*, **16**: 550–571.

H. Cho and P. Fryzlewicz (2012) High-dimensional variable selection via tilting. *Journal of the Royal Statistical Society Series B*, **74**: 593–622.

H. Cho and P. Fryzlewicz (2012) Multiscale and multilevel technique for consistent segmentation of nonstationary time series. *Statistica Sinica*, **22**: 207–229.

H. Cho and P. Fryzlewicz (2011) Multiscale interpretation of taut string estimation and its connection to Unbalanced Haar wavelets. *Statistics and Computing*, **21**: 671–681.

Chapters in edited books

H. Cho, Y. Goude, X. Brossat and Q. Yao (2015) Modelling and forecasting daily electricity load via curve linear regression. *Modeling and Stochastic Learning for Forecasting in High Dimension*, Lecture Notes in Statistics – Proceedings, **217**: 35–54, Springer.

Conference proceedings

H. Cho and P. Fryzlewicz (2008) Multiscale breakpoint detection in piecewise stationary AR models. Proceedings of IASC 2008, Yokohama, Japan, 5 – 8 December 2008.

Preprints

M. Barigozzi, **H. Cho** and P. Fryzlewicz (2017) Simultaneous multiple change-point and factor analysis for high-dimensional time series. *Under revision, submitted to the Journal of Econometrics*.

H. Cho and K. Korkas (2017) High-dimensional GARCH process segmentation with an application to Value-at-Risk. *In submission*.

Working papaers

H. Cho, C. Kirch and A. Meier (2017+) Multiple change-point detection via multiscale MOSUM procedure with local pruning. *In preparation*.

H. Cho and S. Soccorsi (2017+) Break detection in the group-structure of high-dimensional time series: a factor model approach. *In preparation*.

Software

Accompanying R package `mosum` for the paper 'Multiple change-point detection via multiscale MOSUM procedure with local pruning'.

Accompanying R package `factorcpt` for the paper 'Simultaneous multiple change-point and factor analysis for high-dimensional time series' (2016). Available on CRAN.

Accompanying R package `unsystation` for the paper 'A test for second-order stationarity of time series based on unsystematic sub-samples' (2016). Available on CRAN.

Accompanying R package `tilting` for the paper 'High-dimensional variable selection via tilting' (2012). Available on CRAN.

Invited conference and seminar talks

2018 – Isaac Newton Institute programme on Statistical Scalability, Cambridge, UK.
2017 – Workshop on 'Goodness-of-fit and change-point problems', Bad Herrenalb, Germany
2017 – Joint Statistical Meetings, Baltimore, USA.
2017 – European Meeting of Statisticians 2017, Helsinki, Finland.
2017 – Seminar talk at Stochastic Processes Group, University College London, UK.
2017 – Seminar talk at Statistical Laboratory, University of Cambridge, UK.
2016 – The International Chinese Statistical Association International Conference 2016, Shanghai, China.
2016 – IMS Asian Pacific Rim Meeting 2016, Hong Kong, China.
2016 – 3rd Conference of the International Society for Non-Parametric Statistics (ISNPS), Avignon, France.
2016 – Seminar talk at Department of Mathematics and Statistics, University of Glasgow, UK.
2016 – Seminar talk at Department of Mathematics, University of York, UK.
2015 – CFE/CMS conference, University of London, UK.
2015 – Seminar talk at Department of Statistics, University of Oxford, UK.
2015 – Seminar talk at School of Mathematics, University of Manchester, UK.
2015 – Alan Turing Institute Scoping Workshop, University of Cambridge, UK.
2015 – Joint Statistical Meetings, Seattle, USA.
2015 – New Developments in Econometrics and Time Series, Bochum, Germany.
2015 – Seminar talk at School of Mathematics, Cardiff University, UK.
2015 – Seminar talk at Department of Statistics, University College London, UK.
2014 – Nonlinear Time Series Analysis: Thresholding and Beyond, London School of Economics, UK.
2014 – IMS Asian Pacific Rim Meeting 2014, Taipei, Taiwan.
2014 – 2nd Conference of the International Society for Non-parametric Statistics (ISNPS), Cadiz, Spain.
2013 – Seminar talk at School of Mathematical Sciences, Queen Mary University of London, UK.
2013 – Novel Probabilistic and Statistical Methods for Electricity Networks
RSS Applied Probability Section Meeting, Royal Statistical Society, UK.
2013 – Royal Statistical Society conference, University of Northumbria, UK.
2013 – Seminar talk at Institute of Statistics, Biostatistics and Actuarial Sciences,
Université catholique de Louvain, Belgium.
2012 – Joint Statistical Meetings, San Diego, USA.

2012 – Seminar talk at MACSI Seminar Series, University of Limerick, Ireland.
2011 – Seminar talk at Department of Statistics, Lancaster University, UK.
2010 – INSPIRE: Conference on information representation and estimation, University College London, UK.
2009 – INSPIRE: Conference on information representation and estimation, Imperial College London, UK.

Refereeing and reviewing

Associate Editor for Journal of the Korean Statistical Society (2014–).
Journal screening for Journal of the Korean Statistical Society (2013).
Journal refereeing for Advances in Statistical Analysis, Annals of Statistics, Applied and Computational Harmonic Analysis, Bernoulli, Biometrics, Biometrika, Communications for Statistical Applications and Methods, Computational Statistics, Computational Statistics and Data Analysis, Electronic Journal of Statistics, IEEE Transactions on Reliability, Journal of the American Statistical Association, Journal of Business & Economic Statistics, Journal of Computational and Graphical Statistics, Journal of Econometrics, Journal of Forecasting, Journal of the Korean Statistical Society, Journal of Multivariate Analysis, Journal of Nonparametric Statistics, Journal of Statistical Planning and Inference, Journal of Probability and Statistics, Journal of the Royal Statistical Society Series B, Journal of Time Series Analysis, Scandinavian Journal of Statistics, Spanish Society of Statistics and Operations Research, Stat, Statistical Methodology, Statistics and Computing, and Technometrics.
Book reviewing for Springer Verlag and Chapman & Hall/CRC.

Other activities

Seminar organisation: Weekly Statistics Seminar Series in School of Mathematics at University of Bristol from September 2013 to May 2017.

Session organisation: Invited sessions at IMS Asian Pacific Rim Meetings in Hong Kong (2016) and Singapore (2018).

Consultancy: Participation in Statistics Clinic, a free statistical consulting service to all researchers at University of Bristol since January 2016.

Teaching

Lecturing

I have taught the 3rd year units Linear and Generalised Linear Models (designed the curriculum for the newly introduced unit) and Multivariate Analysis, and the MSc unit Advanced Time Series at University of Bristol.

Tutorials and problem classes

2013–present	Weekly tutorials for 1st year undergraduate students in Probability 1, Statistics 1 and Linear Algebra and Geometry at University of Bristol.
2009 – 2013	Teaching assistant, running problem classes and computer labs for Elementary Statistical Theory, Time Series, Statistical Models and Data Analysis and Statistical inference for undergraduate and postgraduate students at London School of Economics.

Students supervision

MSc project supervision.

Rebeca Perez-Figueroa (graduated in 2014), Title: Second order stationary test based on Unbalanced

Haar wavelets.

Simon Gilson (graduated in 2015), Title: Stationarity testing using the unbalanced Haar transform of the evolutionary wavelet spectrum.

BSc project supervision.

Emma Jenkins (graduated in 2015), Title: Non-stationary time series analysis.

Giulio Pezzulli (graduated in 2016), Title: Cointegration of time series.

Kipp Mcadam Freud, Hamish Flynn (graduate in 2017): Title: Nonstationary time series analysis.

Thomas Webster, Samantha Wise, Victor Wilén (expected to graduate in 2018): Title: Wavelet-based nonstationary time series analysis.

Training

I have completed both Levels 1 and 2 of CREATE (Cultivating Research and Teaching Excellence), University of Bristol's Teaching and Learning Programme in Higher Education in early 2017.

Recognition

I was chosen as one of top four lecturers teaching at Level M (Year 4) within the School of Mathematics from the unit questionnaire responses, for teaching Generalised linear models in Teaching Block 1 of 2014/15.

Administrative duties

Hiring committee: Sat in hiring committees for Lecturers in Statistics (2015), Research Associates (2013, 2015, 2016) and Temporary Teachers (2014) in School of Mathematics at University of Bristol.

PhD examination: Internal examiner for Delyan Savchev (2016).

General

Skills

Languages: English (fluent in speaking, reading and writing), Korean (mother tongue).

Software: R, LaTeX(proficient), Matlab, HTML, MS Office (intermediate).

Memberships

The Institute of Mathematical Statistics (IMS).

updated: December 1, 2017