Jie LI

CONTACT INFORMATION

Department of Statistics
School of Mathematics, Statistics and Actuarial Science
University of Kent, Canterbury, CT2 7NZ
jl725@kent.ac.uk

WORKING EXPERIENCE

Neuroimaging Data Analyst KTP Associate Oct. 2023 –
employed by University of Kent and Innovision IP Limited

Research Officer (with Professor Piotr Fryzlewicz) Oct. 2021 – Sept. 2023
Department of Statistics,
London School of Economics and Political Science

Research Assistant (with Professor Shujun Li) Aug. 2021 – Sep. 2021
School of Computing,
University of Kent

Lecturer in Statistics Dec. 2014 – Sep. 2017
School of Mathematics and Computer Science,
Dali University

Assistant Professor in Statistics Aug. 2012 – Nov. 2014
School of Mathematics and Computer Science,
Dali University

EDUCATION

School of Mathematics, Statistics and Actuarial Science, University of Kent, Canterbury, United Kingdom

Ph.D., Statistics, awarded in September 2021

- Thesis Title: *Statistical Inference for High-dimensional Nonparametric Models*
- Supervisors: Professor Jian Zhang and Dr. Alfred Kume

Yunnan University, Kunming, China

M.S., Probability and Mathematical Statistics, July 2012

- Thesis Title: *Equivalence Tests and Confidence Interval Construction of Risk Difference for An Incomplete Matched-pair Design*
- Supervisor: Professor Niansheng Tang

Yunnan University, Kunming, China

B.S., Statistics, July 2009

VISITING EXPERIENCE

Visiting Scholar 20 Sept. 2015 to 20 Sept. 2016
School of Mathematics, Statistics and Actuarial Science
University of Kent
Inviter: Jian Zhang, Professor

RESEARCH INTERESTS

Change-point detection; Machine learning; Causal inference; Nonparametric inference; High dimensional inference; Functional data analysis; Neuroscience; Matrix-variate analysis

FULL PUBLICATION LIST

Published/Accepted Journal Publications:

[1] **Li, Jie**, Fearnhead, Paul, Fryzlewicz, Piotr, and Wang, Tengyao. **2023**. "Automatic Change-Point Detection in Time Series via Deep Learning". *Journal of Royal Statistical Society, Series B (discussion, to appear)*, arxiv:2211.03860.

[2] Zhang, Jian and **Li, Jie**. **June 1, 2022**. "Factorized Estimation of High-dimensional Nonparametric Covariance Models". *Scandinavian Journal of Statistics* 26, pp. 542–567. DOI: 10.1111/sjos.12529.
[3] Tang, Nian-Sheng, Li, Hui-Qiong, Tang, Man-Lai, and **Li, Jie**. **Mar. 3, 2016**. "Confidence Interval Construction for the Difference between Two Correlated Proportions with Missing Observations". *Journal of Biopharmaceutical Statistics* 26.2, pp. 323–338. DOI: 10.1080/10543406.2014.1000544.

Teaching Training

- I have completed the Associate Fellowship Scheme (AFS) which is for Graduate Teaching Assistants (GTAs) in receipt of a Vice Chancellor Scholarship. It includes two 15-credit core modules: *An Introduction to Learning, Teaching and the Academic Environment* (UN819) and *Contextualising Higher Education Teaching and Learning* (UN831).
- I have achieved the status of Associate Fellow (AFHEA, fellowship reference: PR224926) in 21/07/2021.
- I was approved to be granted for a teacher of Higher Education with People's Republic of China Teacher's Certification Licence. 10 July 2013

Software and Language Skills

Computer Programming:

- Proficient in data analysis using **R, MATLAB** and **Python**.
- Intermediate in C++, LaTeX, Git, Linux, Microsoft Office, SQL, **TensorFlow**
- **R** package: *llfdr* for my Ph.D. thesis, and **Python** package *AutoCPD* for change-point detection
- Parallel scientific computation in High Performance Cluster using 96 CPU cores and 2x NVidia Tesla K80 GPU/Compute Cards (∼10k GPU cores)
- Real Big Data Analysis: Human brain source localization based on the neuroscience dataset (50+Gb). This dataset includes 18 participants' MRI + MEG/EEG data, I firstly build the 3D human brain model based on MRI using **FreeSurfer** in Linux server, then I use **MNE-Python** combining the factorization estimation of nonparametric covariance model to analyse the MEG/EEG data and find the source localization of each participant. Based on the results, further comparison studies are implemented, see the examples 1, 2 and 3.
- Sports Data Analysis: To model loss of complexity in intermittent time series by using nonparametric relative entropy.

Professional Membership

- Royal Statistical Society (RSS)
- International Chinese Statistical Association (ICSA)

Interpersonal Skills

- Problem-solving.
- Team-work.
- Time and task Management.
- Hard-working, responsible.
- Conflict management and resolution skills

Grants

- Refinement Procedure for Eigen Genes in DNA Microarray based on GLasso method, Department of Yunnan Technology (Grant No. 2013FD037, CNY: 60,000), **PI**, completed.
- Refinement Procedure for Eigen Genes of Colon Carcinoma Based on algorithm method, Dali University (Grant No. KYQN201219, CNY: 5,000), **PI**, completed.
- Statistical inference and application of complex data nonlinear model, National Natural Science Foundation of China (Grant No. 10961026, CNY: 200,000), contributor, completed.

Presentations

Invited Talk

- Automatic Change-Point Detection in Time Series via Deep Learning, RSS Discussion meeting, Harrogate, UK. 6th Sept. 2023
- The 10th ICSA International Conference on Global Growth of Modern Statistics in the 21st Century, Shanghai Jiao Tong University, Shanghai, China Dec. 2016

Contributed Talk

- Automatic Change-Point Detection in Time Series via Deep Learning. The 1st Joint Conference on Statistics and Data Science, Beijing, China. 13 July. 2023
- Factorized estimation of high-dimensional nonparametric covariance models. 2022 IMS Annal Meeting: Probability and Statistics, London 29 Jun. 2022
- Scientific Computing Tips of Using R and Rcpp, University of Kent. 27 Apr. 2020
- Covariance Regression Analysis, University of Kent. 17 May 2019
- The Joint Graphical Lasso for Inverse Covariance Estimation across Multiple Classes, University of Kent. 09 Nov. 2018
- Local Nonparametric Shrinkage Covariance Model, University of Kent. Nov. 2017

Websites

- GitHub: https://github.com/Jieli12
- Academic Homepage: https://jieli12.github.io
- Google Scholar: https://scholar.google.com/citations?user=sOhkmd8AAAAJ&hl=en
- Research Gate: https://www.researchgate.net/profile/Jie-Li-271
- LinkedIn: https://www.linkedin.com/in/jie-li-01aa84211/
- ORCID : 0000-0001-8353-1322