

# Lizhong Chen

## Contact Information

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## Research interests

Bioinformatics: limma, edgeR; Generalized linear model; Model selection; Model averaging; Dimensional reduction; High dimensional data.

## Employment

03/2022 - Present     **Walter and Eliza Hall Institute of Medical Research (WEHI)**  
Research Officer at the Bioinformatics Division  
Supervisor: Prof. Gordon K Smyth

## Education

02/2017 - 02/2022     **The University of Melbourne**  
Doctor of Philosophy (PhD) in Statistics  
Supervisors: A/Prof. Guoqi Qian, Prof. Yuriy Kuleshov, Dr Tingjin Chu  
Thesis: Model selection and averaging by Gibbs sampler with a tropical cyclone seasonal forecasting application [Minerva Access]

09/2013 – 07/2016     **Peking University**  
Master of Science (M.S.) in Mathematics  
Mentor: A/Prof. Houhong Fan  
Thesis: A Report on Computations of Cohomology Rings and Homotopy Groups of Lie Groups

09/2009 – 06/2013     **Peking University**  
Bachelor of Science (B.S.) in Mathematics

## Publications

- 2022    Model selection and averaging in high dimensional data using Gibbs sampler with Guoqi Qian, in preparation.
- 2022    Improving Methodology for Tropical Cyclone Seasonal Forecasting in the Australian and the South Pacific Ocean Regions by Selecting and Averaging Models via Metropolis–Gibbs Sampling, *Remote Sensing*, 14 (22), 5872. [doi]  
with Guoqi Qian and Yuriy Kuleshov.

## Softwares

### **IBGS (Iterated Blockwise Gibbs Sampler)**

<https://github.com/Kaukol/IBGS>

### **statmod (statmod: Statistical Modeling)**

<https://cran.r-project.org/web/packages/statmod/index.html>

### **edgeR (Empirical Analysis of Digital Gene Expression Data in R)**

DOI: 10.18129/B9.bioc.edgeR

## Talks and Presentations

- 23/08/2022    **edgeR quasi-likelihood: correcting deviance for bias**  
Bioinformatics division seminar, WEHI
- 30/05/2023    **Extending edgeR for small counts and large samples**  
Bioinformatics division seminar, WEHI

## Teaching experiences

- 07/2017 - 02/2022    **Tutor, The University of Melbourne**  
Linear Algebra, Accelerated Mathematics I/II, Complex Analysis, Multivariate Statistical Techniques
- 07/2018 - 07/2021    **Assignment and Exam Marker, The University of Melbourne**  
Statistical Modelling, Mathematical statistics,
- 09/2013 - 07/2016    **Teaching assistant, Peking University**  
Mathematical analysis I/II, Calculus I, Advanced algebra I.

## Honors and scholarships

- 2017 Melbourne Research Scholarship (The University of Melbourne).
- 2016 Outstanding Graduate of Beijing
- 2016 Outstanding Graduate of Peking University
- 2015 Guanhua Scholarship (Peking University)
- 2014 National Scholarship (Peking University)
- 2009 Second-Class Freshmen Scholarship (Peking University)

## Referee services

- 2022 **Applied mathematical modelling**