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I am an **Assistant Professor of Statistics** at *Universiti Brunei Darussalam* (UBD). My expertise lie in statistical methodology and computation, with applications towards the natural and social sciences.

I am passionate about bringing data and technology to the forefront of our daily interaction with the world. Using the R programming language, I build statistical models for data analysis in order to gain insights, make predictions, and aid decision-making. I am frequently engaged in cross-disciplinary research collaborations and statistical consultations.

## Research Interests

Latent variable models

Binary and multinomial probit models

Hedonic pricing models

Gaussian processes

Structural equation models

Spatio-temporal models

Bayesian estimation

## Education

2014 — 2018

**PhD in Statistics**, London School of Economics and Political Science

Supervisors: Wicher Bergsma<sup>1</sup> and Irini Moustaki<sup>2</sup>

*Thesis: Regression modelling using priors depending on Fisher information covariance kernels (I-priors)*<sup>3</sup>

2013 — 2014

**MSc in Statistics (distinction)**, London School of Economics and Political Science

2006 — 2010

**BSc & Master in Mathematics, Operational Research, Statistics and Economics (first class honours)**, University of Warwick

Supervisor: David Firth<sup>4</sup>

*Dissertation: The analysis of paired comparison data using Bradley-Terry models with applications to football data*

## Awards & honours

2023

**Teaching Excellence Award in the Sciences**, *Universiti Brunei Darussalam*

2020

**Arnold Zellner Thesis Award in Econometrics and Statistics (honourable mention)**<sup>5</sup>, American Statistical Association (Business and Economic Statistics Section)

2013 — 2018

**In-Service Training Scheme Scholarship**, Public Service Commission, Prime Minister's Office, Brunei

2006 — 2010

**Supreme Commander of The Royal Brunei Armed Forces Scholarship**<sup>6</sup>, Ministry of Defence, Brunei

## Employment

2019 — present

### Assistant Professor of Statistics

Mathematical Sciences, Faculty of Science, *Universiti Brunei Darussalam*<sup>7</sup>

I teach SM-1402 Basic Statistics, SM-2302 Software for Mathematicians, SM-4331 Advanced Statistics, SM-4335 Advanced Probability, and CU-0304 Sciences for University Study. I also supervise mathematics students' final year projects. In addition to my teaching duties, I am the current Postgraduate Coordinator (Mathematics). I previously held the post of Discovery Year<sup>8</sup> advisor (2019-2021).

2014 — 2018

### Graduate Teaching Assistant

Department of Statistics, London School of Economics and Political Science<sup>9</sup>

I held various teaching roles ranging from secondary teaching to marking for masters (ST416 Multilevel Modelling, ST421 Development in Statistical Methods) and undergraduate level courses (ST312 Applied Statistics Project) at the LSE. In addition, I also held assistant invigilator and examiner roles for both the LSE and the University of London International Examinations respectively.

2010 — 2014

2018 — 2019

### Research Officer

Centre for Science and Technology, Research and Development (CSTRAD), Ministry of Defence, Brunei<sup>10</sup>

I provided analytical insight into matters arising from strategic procurement activities of the Royal Brunei Armed Forces (RBAF). This entailed market research, cost-benefit analyses, and writing technical reports. I was a core team member for the procurement and delivery of 12 Sikorsky S-70i helicopters<sup>11</sup> (US\$325M), and also the focal point for the development of tender evaluation criteria using the Analytic Hierarchy Process.

## Service

2020 — present

### Ad-hoc Reviewer

Annals of Applied Statistics<sup>12</sup>; Journal of the Royal Statistical Society: Series C<sup>13</sup>

2020 — present

### Review Editor

Frontiers in Applied Mathematics and Statistics<sup>14</sup>

2020

### Guest Lecturer

Universiti Teknologi Brunei<sup>15</sup>

2014 — 2015

### MSc Programme Facebook Administrator

Department of Statistics, London School of Economics and Political Science  
Acted as student liaison for incoming cohort of MSc Statistics 2015/16.

2013 — 2015

### Auditor

Brunei Down's Syndrome Association (ABLE)<sup>16</sup>

## Consultancy

2017 — 2018

### Data Analyst

Universiti Brunei Darussalam

Project: The unmet needs of cancer carers in Brunei Darussalam.

2021 — 2022

### Statistical Modelling

Ministry of Defence, Brunei

Project: Human performance optimisation

## Grants and funding

2021 — 2024

**Extension of I-prior methodology to nominal response models** (~BND 7,000), Faculty of Science Research Grant, *Universiti Brunei Darussalam*.

Role: *Principal Investigator*

2021 — 2023

**Examining spillover effects in regional trading blocs** (~BND 17,000), School of Business and Economics Research Grant, *Universiti Brunei Darussalam*.

Role: *Member*

2021 — 2024

**Mathematical Modeling of Genetic Assimilation** (~BND 8,000), Faculty of Science Research Grant, *Universiti Brunei Darussalam*.

Role: *Co-Principal Investigator*

2023 — 2024

**Predictive potential of graphical descriptors for QSPR/QSAR model learning of compounds** (~BND 15,700), Faculty of Science Research Grant, *Universiti Brunei Darussalam*.

Role: *Co-Principal Investigator*

## Research output

### Articles (peer-reviewed)

2023

A11

**Importance of Baseline Assessments: Monitoring of Sungai Brunei River's Water Quality**

O. Onifade, N. Shamsuddin, *H. Jamil*, D. T. C. Lai, S. Gödeke  
H2Open Journal (to appear)

A10

**Extremal hyper-Zagreb index of trees of given segments with applications to regression modeling in QSPR studies**

S. Hayat, M. Adil Khan, A. Khan, *H. Jamil*, M. Yasir Hayat Malik  
Alexandria Engineering Journal, 80(1) pp.259–268

A09

**Statistical significance of valency-based topological descriptors for correlating thermodynamic properties of benzenoid hydrocarbons with applications**

S. Hayat, N. Suhaili, *H. Jamil*  
Computational and Theoretical Chemistry, 114259. DOI:  
10.1016/j.comptc.2023.114259

A08

**The domination number of the king's graph**

M. Arshad, S. Hayat, *H. Jamil*  
Computational and Applied Mathematics, 42(251). DOI: 10.1007/s40314-023-02386-8

2022

A07

**Factors Affecting Readmission to a Drug Rehabilitation Centre**

F. Jali, E. Leong, *H. Jamil*  
Journal of Population and Social Studies, 30, 591-601.

- A06 **Iron and Manganese Mobilisation due to Dam Height Increase for a Tropical Reservoir in South East Asia**  
S. Gödeke, *H. Jamil*, M. Schirmer, A. Bretzler, N. Shamsuddin, N. H. Mansor  
Environmental Monitoring and Assessment, 194(5), 358.
- A05 **Pairwise likelihood estimation for confirmatory factor analysis models with categorical variables and data that are missing at random**  
M. Katsikatsou, I. Moustaki, *H. Jamil*  
British Journal of Mathematical and Statistical Psychology, 75(2) 23-45.  
 **Wiley Top Downloaded Article 2021**
- 2021 A04 **Advocating Blended Learning for University Undergraduate Level Mathematical Instruction Beyond Covid-19**  
*H. Jamil*, H. M. Ramli, E. Leong  
In: Engineering and Sciences Teaching and Learning Activities: New Systems Throughout COVID-19 Pandemics, pp. 33-45. Ed. by Samsul Ariffin Abdul Karim and Saiful Azmi Hussain. Studies in Systems, Decision and Control, vol 381. Cham: Springer. ISBN: 978-3-030-79613-6.
- A03 **Latent Class Analysis: Insights about design and analysis of schistosomiasis diagnostic studies**  
A. Koukounari, *H. Jamil*, E. Erosheva, C. Shiff, I. Moustaki  
PLOS Neglected Tropical Diseases, 15(2), e0009042.
- 2020 A02 **Bayesian Variable Selection for Linear Models Using I-Priors**  
*H. Jamil*, W. Bergsma  
In: Theoretical, Modelling and Numerical Simulations Toward Industry 4.0, pp. 107–132. Ed. by Samsul Ariffin Abdul Karim. Studies in Systems, Decision and Control, vol 319. Singapore: Springer. ISBN: 978-981-15-8986-7.
- 2018 A01 **Regression modelling using priors depending on Fisher information covariance kernels (I-priors)**  
*H. Jamil*  
PhD Thesis. London School of Economics and Political Science.  
 **Arnold Zellner award, honourable mention (top 3)**

## Working papers (preprints and unpublished reports)

- 2023 W10 **Pairwise likelihood estimation and limited information goodness-of-fit test statistics for binary factor analysis models under complex survey sampling**  
*H. Jamil*, I. Moustaki, C. Skinner  
arXiv:2311.02543 [stat.ME]
- W09 **Additive interaction modelling using I-priors**  
W. Bergsma, *H. Jamil*  
ResearchGate preprint. DOI: 10.13140/RG.2.2.21861.88804.
- W07 **An Exploratory Investigation on Foreign Language Anxiety among English for Islamic Studies Learners in Brunei Darussalam**  
N. Noorashid, *H. Jamil*  
Manuscript in preparation
- W08 **Patterns of metabolic thermal independence in marine gastropods: A meta-analytical assessment**  
M. Akram Ullah, D. Marshall, *H. Jamil*  
Manuscript in preparation

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|------|-----|---|
| 2021 | W06 | <b>I think I understand: Investigating misconceptions regarding hypothesis test concepts among university students</b><br>A. Zaini, H. Jamil, E. Leong<br>EdArXiv. DOI: 10.35542/osf.io/dj6x9 |
| 2020 | W05 | <b>Regression modelling with I-priors: With applications to functional, multilevel and longitudinal data</b><br>W. Bergsma, H. Jamil<br>arXiv:2007.15766 [math, stat].                        |
|      | W04 | <b>Investigating the effect of load carriage on soldiers' performances using Bayesian structural equation models</b><br>H. Jamil, A. Salleh, L. Thieng Chan                                   |
| 2019 | W03 | <b>iprior: An R Package for Regression Modelling using I-priors</b><br>H. Jamil, W. Bergsma<br>arXiv:1912.01376 [stat].   |
| 2017 | W02 | <b>Discussion contribution</b><br>W. Bergsma, H. Jamil<br>TI Cannings, RJ Samworth (2017). Random-projection ensemble classification. JRSSB, 79.4, pp. 959-1035.                              |
| 2010 | W01 | <b>Analysis of paired comparison data using Bradley-Terry models with applications to football data</b><br>H. Jamil<br>Masters Thesis. University of Warwick.                                 |

## Software

|      |    |  |
|------|----|--|
| 2021 | S4 | <b>R/iprior: Regression Modelling using I-priors</b><br>H. Jamil<br>CRAN 0.7.3 downloads 35K   |
| 2020 | S3 | <b>stat-tables: Open-source statistical tables for use in examinations, tests, and assignments</b><br>H. Jamil<br>release v0.2 downloads 762 |
| 2018 | S2 | <b>R/ipriorBVS: Bayesian Variable Selection using I-priors</b><br>H. Jamil<br>release v0.1.1   |
|      | S1 | <b>R/probit: Binary and Multinomial Probit Regression with I-priors</b><br>H. Jamil<br>release v0.1  |

## Talks

Further information regarding the following events are available at [haziqj.ml/talk](https://haziqj.ml/talk)

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|------|-----|---|
| 2023 | T18 | <b>International Meeting of the Psychometric Society (IMPS)</b> , University of Maryland, USA<br>Pairwise likelihood goodness of fit tests for binary factor models |
| 2022 | T17 | <b>Teaching and Learning Centre Workshop</b> , UBD, Brunei<br>Quality Typography in Teaching Material: An interactive introduction to LaTeX                         |

|      |     |   |
|------|-----|---|
|      | T16 | <b>Department of Statistics and Data Science Seminar</b> , NUS, Singapore<br>Regression modelling using I-priors  |
|      | T15 | <b>International Meeting of the Psychometric Society (IMPS)</b> , University of Bologna, Italy<br>Selecting interaction effects in additive models using I-priors           |
| 2021 | T14 | <b>MINDEF Scholars Sharing Session</b> , Online<br>Life After MINDEF  |
| 2020 | T13 | <b>IADA Seminar</b> , UBD, Brunei<br>A latent variable model for maximal performance testing with dropouts for military applications  |
|      | T12 | <b>Social Statistics Group Meetings</b> , LSE, London, UK<br>Investigating the effect of load carriage on soldiers' performances using structural equation models           |
| 2019 | T11 | <b>UBDSBE Seminar Invitation</b> , UBD, Brunei<br>Bayesian Variable Selection for Linear Models   |
|      | T10 | <b>CSTRAD Sharing Session</b> , Ministry of Defence, Brunei<br>Misconceptions in Demography   |
| 2018 | T09 | <b>FOS Research Seminar</b> , UBD, Brunei<br>A Brief Guide to Variational Inference   |
|      | T08 | <b>Inaugural Workshop on Data Science Theory and Practice</b> , LSE, London, UK<br>Binary and Multinomial Regression using Fisher Information Covariance Kernels (I-priors) |
|      | T07 | <b>Social Statistics Group Meetings</b> , LSE, London, UK<br>A Beginner's Guide to Variational Inference  |
| 2017 | T06 | <b>Turing Data Study Group</b> , The Alan Turing Institute, London, UK<br>Can data science help identify potential drivers of extremism?                                    |
|      | T05 | <b>International Meeting of the Psychometric Society (IMPS)</b> , University of Zürich, Switzerland<br>Regression Modelling with I-Priors                                   |
|      | T04 | <b>Department of Statistics PhD Presentation Event</b> , LSE, London, UK<br>Binary probit regression with I-priors  |
| 2016 | T03 | <b>Social Statistics Group Meetings</b> , LSE, London, UK<br>I-priors in Bayesian Variable Selection: From Reproducing Kernel Hilbert Spaces to Hamiltonian Monte Carlo     |
| 2015 | T02 | <b>Postgraduate Research Seminar</b> , LSE, London, UK<br>Two-stage Bayesian variable selection for linear models using I-priors  |
|      | T01 | <b>Department of Statistics PhD Presentation Event</b> , LSE, London, UK<br>Regression Modelling using I-priors   |

# Skills

🔧 **Programming, data analysis and visualisation** using R, BUGS/JAGS, Stan, Stata, Mplus, and Mathematica

🔬 **Reproducible research** using Quarto, R Markdown, LaTeX, Git and AWS EC2

💻 **Web development** using HTML, CSS, Hugo, GitHub Pages and Netlify

Made with the R package pagedown. The source code is available from [github.com/haziqj/cv](https://github.com/haziqj/cv).  
Document last rendered on 2023-11-20 01:44:45.434165 [UTC].

# Links

1. <http://stats.lse.ac.uk/bergsma/>
2. <http://stats.lse.ac.uk/moustaki/>
3. <https://phd.haziqj.ml/>
4. <http://www2.warwick.ac.uk/fac/sci/statistics/staff/academic-research/firth/>
5. <https://community.amstat.org/businessandeconomicstatisticssection/new-item/new-item2>
6. <https://scholarship.mindef.gov.bn/Theme/Home.aspx>
7. <http://fos.ubd.edu.bn/>
8. <https://ubdmaths.github.io/dy/>
9. <http://lse.ac.uk/Statistics/>
10. <https://www2.mindef.gov.bn/cstrad/>
11. <https://news.lockheedmartin.com/2011-12-13-Sikorsky-Signs-with-Brunei-Ministry-of-Defence-for-Sale-of-S-70iTM-BLACK-HAWK-Helicopters>
12. <https://imstat.org/journals-and-publications/annals-of-applied-statistics/>
13. <https://rss.onlinelibrary.wiley.com/journal/14679876>
14. <https://www.frontiersin.org/journals/applied-mathematics-and-statistics/>
15. <http://www.utb.edu.bn/>
16. <https://www.instagram.com/ablebrunei/>