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| Position Title | Research Fellow |
| Group/Portfolio | Griffith Health |
| Classification | Research Fellow Grade 1/2 - Statistical Modelling |
| Position Number | 00063510 |
| Reports To | Professor Shu Kay Angus Ng |
| Employment Type | Fixed Term – 2.5 years |

1.0 Position Purpose

- We are seeking a Postdoctoral Research Fellow who will join our research team, actively engaged in pioneering research in statistical modelling, and their applications (in applied statistics). In this role, it is expected that you will contribute towards collaborative and independent research on an Australian Research Council (ARC) Discovery Project: “Advancing statistical models for clustering data with structured dependence” (DP250100860). This project aims to develop novel methods to identify important subgroups in data with various forms of dependence. It will propose new model-based clustering techniques that can capture complex relationships in data and enhance model validity.
- The primary intended outcome is to develop advanced methods and algorithms that can accurately identify clusters, patterns, outliers, and model evaluation. The potential benefits are to improve the validity of clustering models for analysing dependent data and direct effective crime prevention in Australia, with key application to Queensland Police Service (QPS) crime-incident data for improvement to the understanding of co-offending crimes, repeat victimisation, and crime hot spots.
- This position provides significant opportunities for growth and to pursue a career in academia or industry, through contribution to the supervision of the PhD student funded by this ARC award and assistance in statistical consulting activities in the Griffith Biostatistics Unit, Griffith Health, as appropriate.

2.0 Eligibility Requirements

- The successful candidate will hold a PhD in statistics (or closely related discipline), preferably in statistical modelling with experience in cluster analysis.
- The successful candidate will have demonstrated high-level mathematical and analytical skills, knowledge and experience in computational programming for statistical modelling, and track record in the production of research outcomes (**Grade1**) or track record to lead in the production of research outcomes or grants in related research areas (**Grade 2**).

3.0 Key Responsibilities

- Contributes with the Investigators to the development of statistical methodology and

algorithms in the following research areas: GLMMs to effectively capture a variety of mixed intra- and between-subject correlations by random effects, mixed-effect mixture models for clustering recurrent event data and random graphs, robust estimation methods via expectation-maximisation (EM) based algorithms, predictive inference methods for assessing random effects in mixture models, and graphic visualisation methods for mixture models of random graphs.

- Undertake statistical analysis of sensitive QPS crime data at the secure research facilities in the Social Analytics Lab (SAL) of the Griffith Criminology Institute (GCI).
- Produce high-quality research outputs including publications in peer-reviewed journals.
- Maintain compliance with relevant legislation and University policies and procedures, including research ethics, equity and health & safety, laboratory standards and exhibit good practice in relation to same.
- Be a leading example of the principles and values embodied in the University's Code of Conduct, and behave, act and communicate at all times to reflect fairness, ethics and professionalism.

4.0 Key Capabilities

- Griffith University identifies the attributes of resilience, flexibility, creativity, digital literacy and entrepreneurship as critical to our graduates' success, in the rapidly changing future world of work. We have established a Griffith University Capability Development Framework to provide a common language of some of the non-technical organisation skills that will support our staff to thrive now and into the future. The Capability Development Framework will assist you to understand the current skill level of this position in the non-technical but critical skill domains that are increasingly important in a changing workplace context.

To read about some of the non-technical organisation skills for this position, please see the Leads Self/Others section of our [Capability Development Framework](#).