

News

Yu Ma wins AMSI Internship with ABS

12 September 2017

PhD student Yu Ma has been awarded an AMSI Internship to undertake a collaborative project with the Australian Bureau of Statistics. (ABS).

The project considers methods for weighting and analysing longitudinally linked administrative data.

The project will last for six months. Yue will receive \$18,000 as a scholarship. Yu Ma's PhD supervisor Associate Professor Yan-Xia Lin will be the academic mentor for the project and the ABS supervisor is Dr James Chipperfield.

The analysis of multiply linked datasets is a complex area for which there are some solutions but no strong agreement on a single approach. Various approaches have been proposed under a number of restrictive assumptions. Research has been undertaken at the ABS for particular analyses, but it is uncertain how readily they can be generalised to other applications or extended to multiply linked datasets.

This project will consider a generalised conceptually valid methodology for generating weights that we can apply to all longitudinally linked datasets for all analytical purposes, without having to spend large amounts of resources generating weights for each application. The project will examine the current literature and develop an approach for suitably weighting linked longitudinal data. It will demonstrate the theoretical statistical properties of the weighted estimates (bias, variance and MSE) through a bootstrap parametric and / or design-based simulation for cross sectional analyses. Further work will extend the approach to a multi-level model with time as the lowest level of analysis in order to demonstrate the accuracy of model predictions under the weighting scheme. The bias and accuracy of model predictions for small sub-populations will also be investigated.

Last reviewed: 12 September, 2017

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