



**Banking on Data Science: Big Data Analytics of Consumer Behaviours Across Financial Spaces
ESRC DTP Joint Studentship**

University of Warwick and University of Nottingham

The Midlands Graduate School is an accredited Economic and Social Research Council (ESRC) Doctoral Training Partnership (DTP) and is a collaboration between the Universities of Warwick, Aston, Birmingham, Leicester, Loughborough and Nottingham.

We invite applications for an ESRC Doctoral Joint Studentship between the University of Warwick (where the student will be registered) and the University of Nottingham to commence in October 2018.

The Project

What can we learn about human behaviour from mass financial transaction data such as credit card or current account statements? While traditional economic models of consumer behaviour assume that rational consumers continually make optimal choices, alternative models suggest that consumers tend to be guided by heuristics or rules of thumb. We will investigate how consumers make financial decisions in practice using large datasets. Potential topics for PhD chapters include:

- *Simultaneous co-holding of assets and debts.* Why do people co-hold savings and debts, when they could pay down their debts and save interest payments? This behaviour apparently ignores a simple arbitrage opportunity. Are mental accounting and limited attention responsible?
- *Using financial products in a manner inconsistent with their primary purpose.* Why, and how, do people misuse financial products (e.g., using a credit card for cash withdrawals when a cheaper loan is available)? Understanding 'consumer product fit', is important given the variety of saving and borrowing products.
- *Biases and over-reactions to losses and gains.* Detailed investor data allows us to observe how investors react to losses and gains. What are the psychological processes underlying this economic behaviour?
- *Machine learned personality.* Can we use mass transaction data as a record of the behaviours people engage in to abstract personality measures? How does this machine-learned personality compare against traditional consumer segmentation and credit scoring?

This project is a collaboration between Prof. Neil Stewart, a Psychologist and Behavioural Scientist at Warwick Business School, and Dr John Gathergood, an Economist at Nottingham University. The project will use data sets held at Warwick and Nottingham, including transactions from 1.4 million credit card users and trading records from 200,000 private investors provided by major UK financial institutions. The project will be linked with the ESRC's Network for Integrated Behavioural Science <http://www.behavioural-science.ac.uk/>.

We particularly welcome applications from candidates with outstanding training in economics, finance, and psychology and a background in methods from applied econometrics and data science / machine learning. Candidates should have extensive experience of packages such as R and STATA. The PhD training programme will provide advanced training in research methods and quantitative data analysis.

References and other work in progress can be viewed at <http://www.stewart.warwick.ac.uk/publications/> and <https://sites.google.com/site/gathergoodjohn/>.

Application Process

To be considered for this PhD, please complete the Joint Studentship application form [available online here](#) and email this to Sharon.King@wbs.ac.uk. Shortlisted applicants will also be required to provide two references.

Application deadline: Monday 19th February, 23:59

Midlands Graduate School ESRC DTP

Our ESRC studentships cover fees and maintenance stipend. Support is available only to successful applicants who fulfil eligibility criteria. To check your eligibility, visit: www.mgsdtp.ac.uk/studentships/eligibility/.

Informal enquiries to Professor Neil Stewart neil.stewart@wbs.ac.uk or Dr John Gathergood john.gathergood@nottingham.ac.uk.