



Learning to see: How do social scientists learn to interpret fMRI? ESRC DTP Collaborative Studentship

University of Nottingham and Ilixa Ltd.

The Midlands Graduate School is an accredited Economic and Social Research Council (ESRC) Doctoral Training Partnership (DTP). One of 14 such partnerships in the UK, the Midlands Graduate School is a collaboration between the University of Warwick, Aston University, University of Birmingham, University of Leicester, Loughborough University and the University of Nottingham.

The University of Nottingham as part of Midlands Graduate School is now inviting applications for an ESRC Doctoral Studentship in association with our collaborative partner, Ilixa Ltd., to commence in October 2019.

In this project, we aim to understand how neuroscientists "learn to see" with functional Magnetic Resonance Imaging (fMRI).

Professional performance often depends upon the ability to understand complex visualizations. From radiologists detecting tumours through fashion designers interpreting patterns to create clothing such "professional vision" is a fundamental component of expertise.

fMRI measures brain activity and produces maps highlighting the regions involved in mental processes and is now commonplace in the social sciences. The media routinely refer fMRI and in so doing present an apparently easily understood image as a striking form of "visual proof". Yet, these maps are complex representations whose interpretation is demanding and whose form differs fundamentally from other visualizations. Understanding what makes experts successful and the difficulties faced by novices will be crucial to developing best practice for the teaching of fMRI interpretation and in the design of new tools. To do so, we will analyse curricula in Higher Education (textbook analysis, interviews with students and their lecturers). Then, we will recruit experts and novices, and study how they interpret fMRI maps presented to them on an online viewer using methods such as eye tracking and protocol analysis. We hope to enable the development of new teaching approaches and better software packages.

The selected candidate will benefit from experienced multi-disciplinary supervisors with complementary expertise, and from opportunities for additional training through both Psychology and Education in methods and theory. They will also benefit from Ilixa Ltd.'s links with the image analysis community and their insight into the commercial applications of research.

Given the interdisciplinarity of this project, we are looking for candidates with a good fit to the topic and methods, (e.g. a background in Psychology or Cognitive Science/Neuroscience), as well as an enthusiasm to learn new skills and techniques. You will need a strong 2i as minimum to be

considered and the eventual award may be made as 1+3/3.5/+3 dependent on prior qualifications and training.

Application Process

To be considered for this PhD, please complete the Collaborative Studentship application form [available online here](#), provide a CV and a covering letter outlining the direction you would like to take with this project, along with two references email this to Chris Naylor (email: SS-PGR-JC@exmail.nottingham.ac.uk).

Application deadline: Wednesday 6th March

Midlands Graduate School ESRC DTP

Our ESRC studentships cover fees and maintenance stipend and extensive support for research training, as well as research activity support grants. Support is available only to successful applicants who fulfil eligibility criteria. To check your eligibility, visit:

www.mgsdtp.ac.uk/studentships/eligibility/

Informal enquiries about the research prior to application can be directed to Shaaron.Ainsworth@nottingham.ac.uk