

## **Northeastern University London Fully Funded PhD Scholarship in Network Science**

### ***Integrating Multimodal Data to Understand Trajectories and Biomarkers of Mental Health Disorders using Network Science and Machine Learning***

Northeastern University London > Faculty of Network Science

Deadline: 16 February 2025 (applications will be considered on a rolling basis)

Funded PhD Project (UK or International Students)

Funding provider: Northeastern University London (NU London)

Subject areas: Network Science, Network Neuroscience, Natural Language Processing, Data Science, Machine Learning, Mental and Brain Health

Project start date: April 2025

Supervisors (\*lead):

- Andreia Sofia Teixeira\* (Northeastern University - London)
- Sukhwinder Singh Shergill (University of Kent)

Aligned programme of study: PhD in Network Science

Mode of study: Full-time

#### **Northeastern University London**

As part of a major investment, Northeastern University London (NU London) has multiple, fully-funded PhD studentships available to accelerate its interdisciplinary research in the humanities, social sciences, and computing, maths, engineering and natural sciences. Each scholarship is fully-funded for three and a half years (UKRI rates) and includes full course fees, an annual stipend (including an additional London allowance) and associated costs, such as training.

NU London is both a UK university governed by UK higher education regulations, and the European campus of Northeastern University – a large, top-tier research intensive, Boston-

based institution. Founded in 1898, Northeastern University is known for its high-impact research, aimed at solving problems across the globe. Interdisciplinarity, experiential learning, and connection to partners beyond academia are at the heart of the Northeastern University ethos. Northeastern received \$230.7m of external research funding in 2022, and is the recognized leader in experience-driven lifelong learning. It has campuses across the United States and Canada (in Boston; Charlotte, North Carolina; Portland, Maine; Oakland, California; San Francisco; Seattle; Silicon Valley; Arlington, Virginia; the Massachusetts communities of Burlington and Nahant; Toronto and Vancouver). Whilst the PhD will be a UK qualification, students will have the opportunity to engage with and visit the Northeastern University network overseas as part of their London-based doctoral studies, providing a truly unique and highly sought-after dimension to their research training.

## **The Project**

We are seeking a highly motivated candidate with a background in computational neuroscience, data science, cognitive psychology, or a related field to join an innovative PhD project at the intersection of network science, machine learning, and mental health research. This project aims to develop cutting-edge methods to integrate and analyze multimodal data—ranging from cognitive assessments and patient self-reports to neuroimaging and electronic health records (EHR)—to uncover novel biomarkers and improve the profiling of mental health trajectories. The successful applicant will employ techniques such as natural language processing (NLP), graph theory, and advanced machine learning to explore cognitive-emotional patterns and brain connectivity dynamics, contributing to a unified framework for understanding mental health. This interdisciplinary research promises to drive advancements in personalized diagnosis and intervention strategies. Ideal candidates should have strong analytical and programming skills, a passion for mental health research, and an aptitude for interdisciplinary collaboration.

## **The successful candidates will:**

- Have a proven, strong educational background in computer science, network science, data science, neuroscience, computational sciences, engineering or a related subject (see eligibility criteria)
- Proficiency in programming languages relevant to research, e.g., Python, R, SQL, Matlab, Julia (essential).
- Fluency in English, both spoken and written (essential)
- Highly collaborative spirit, personal initiative, and genuine interest in interdisciplinary teamwork (essential).
- Enthusiasm for interdisciplinary applied research (essential).
- Be excited and inspired by the proposed project area
- Be a self-starter (essential)
- Excellent personal and good communication skills (essential).
- Have an inquiring mind and be willing to challenge themselves (essential).

The successful candidates will benefit from a brand new campus on the banks of the River Thames next to Tower Bridge. This is an interdisciplinary, vibrant research environment with international collaboration and networking opportunities and dedicated research space. It will

form the hub of a highly experienced, multi-institution supervisory team from NU London, Northeastern University and the University of Kent. In addition, successful candidates will benefit from the unique connection to the wider Northeastern University network in North America, providing a range of additional research opportunities and learning resources.

Shortlisted candidates will be interviewed by early March 2025. Candidates are welcome to contact the NU London supervisor with informal enquiries before the application deadline: Andreia Sofia Teixeira ([sofia.teixeira@nulondon.ac.uk](mailto:sofia.teixeira@nulondon.ac.uk)).

### **Eligibility**

- Bachelor's degree in a relevant subject - 2:1 or 1st (essential)
- Master's degree in a relevant subject (optional)

### **English Language requirements:**

If applicable – IELTS 7 overall (with a score of at least 6.5 in each individual component) or equivalent.

### **Nationality**

Applications are open to UK and international students. Please indicate if you are likely to require a visa on your application. We are unable to support visa costs

### **Funding**

This scholarship covers the full cost of tuition fees, an annual stipend and an additional London allowance (set at UKRI rates) for 3.5 years. For the 2024/2025 academic year the annual stipend is £21,237. Annual increments will be in line with UKRI rates.

### **How to Apply**

Please submit a CV and a Covering Letter stating how you meet the requirements and why you are interested in the proposed research project by clicking on **this link**. Please reference your application “**R131482**”