Project title: Federated Multi-task Learning under Dynamic Sensor Networks for Edge-enabled Sleep Management

Project ID (optional):

Accept all year-round applications

Funding information: If you are a home (UK) student please contact the academic below to discuss possible funding options. Unfortunately, at this time we do not have funding for international applicants but would be happy to consider applications from international candidates who have secured their own sponsorship or are self-funded.

Project description:

Overview

Edge-based sleep management offers an accessible solution for monitoring sleep patterns, gaining insights into sleep-related issues, and personalised sleep health management. However, the dynamic nature of sensor networks caused by frequently adding and removing nodes has become the bottleneck in achieving optimal performance and trustworthiness. This project will focus on how a federated multi-task learning framework can be effectively designed and optimised to address the challenges of dynamic sensor networks for sleep management. Through the joint supervision between multiple disciplines, the student will be offered a unique opportunity to develop a robust personal portfolio in edge intelligence for healthcare while gaining comprehensive training in both professional and ethical aspects of research.

Eligibility Criteria

A minimum 2:1 Honours degree or international equivalent in a subject relevant to the proposed PhD project (such as mathematics or theoretical physics) is our standard entry, however we place value on prior experience, enthusiasm for research, and the ability to think and work independently. Excellent analytical skills and strong verbal and written communication skills are also essential requirements. A Masters qualification is not required if you have a minimum 2:1 degree or can evidence alternative experience in a work or research-based project. If you have alternative qualifications or experience, please contact us to discuss.

Applicants whose first language is not English require an IELTS score of 6.5 overall with a minimum of 5.5 in all sub-skills. International applicants may require an ATAS ([Academic Technology Approval Scheme](https://www.gov.uk/guidance/academic-technology-approval-scheme)) clearance certificate prior to obtaining their visa and to study on this programme.

Application enquiries:

Jingjing Zhang [Jingjing.Zhang@ncl.ac.uk](mailto:Jingjing.Zhang@ncl.ac.uk)