

# BU MATCH FUNDED STUDENTSHIPS 2024

## PROJECT DESCRIPTION

PROJECT TITLE
Digital scoring of severity in anterior/posterior circulation strokes
PROJECT SUMMARY
This project involves app development for identification and automatic scoring of severity in anterior/posterior circulation stroke. We aim to study all aspects of stroke symptoms and current standards of objective assessments to explore if this is feasible to use smart phone technologies to make early diagnosis for stroke. For example the vibratory mode of mobile phone can be used for quantifying sensory deficit such as facial palsy, accelerometer and gyros can be used for arm and leg balance/coordination assessment, signal processing techniques can be used for detecting slur in voice and image processing for vision disturbance assessment. Early recognition of posterior circulation stroke may prevent disability and save lives. The history of scores can then be utilized to monitor the effectiveness of treatment methods and quantify a patient's improvement or decline.
ACADEMIC IMPACT

The academic impact of this research will be significant since the proposed research is quite unique that has not been attempted before. The timeliness of this project cannot be overemphasized since the costs to the UK National Health Service of stroke at the moment are estimated to be over £9 billion per year and the cost is expected to rise in real terms by around 30% by the year 2030. The NIHSS score has relatively moderate sensitivity in posterior circulation strokes which are mo0(r)8(e)-163

benefit NHS operations. The project will further provide opportunity to work closely with clinicians and patient user groups to understand stroke symptoms and implement them digitally thus quantifying stroke severity digitally. Due to the nature of the project it will provide a unique training opportunity in multidisciplinary areas of

