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£690k funding for stroke research

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Researchers at the **University of Essex** have been awarded a share of over £690,000 to develop hi-tech devices to improve the recovery of stroke patients.

The Department of Computer Science has been backed by the Engineering and Physical Sciences Research Council to develop the 'Smart Rehabilitation' project.

The project, which involves computer scientists and medical researchers, will develop monitoring systems which could support home-based rehabilitation treatment for patients who have sustained a stroke.

The hi-tech devices would enable patients and their carers to get on-the-spot audio and visual feedback on their progress after exercise sessions.

Stroke is the largest single cause of serious adult disability in the UK:10,000 people each year experience a first stroke and another 3,000 have a further stroke.

The majority are elderly who, following a stroke, find themselves hospitalised or receiving hospital services at home with subsequent needs for rehabilitation.

Essex and other university teams are also aiming to develop software to ensure data collected by the movement sensors is transmitted to hospital or clinic-based physiotherapists in an innovation which could reduce or remove the need for face-to-face therapy.

Informatics and computer science teams will work with physiotherapists and psychologists to produce hardware and software prototypes which will be tested among stroke patients.

Prof Huosheng Hu will lead the Essex effort to develop prototype hardware and software to monitor the quality and duration of therapy interventions in a home or hospital environment.

He said: 'We will focus on the development of two levers of complexity. One is a 3D optical tracking system that will be used to capture kinematic data

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from individual physiotherapy intervention and provide a full kinetic and kinematic modelling for gait and movement analysis in a laboratory setting.

“Another is solid-state motion sensors such as accelerometers and gyroscopes, which can be incorporated into a bean bag to monitor the patients movements at home.

“An interactive user interface will be developed and a wireless link will be used to send the data to a central unit which has an internet connection.”





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