Vision-based 3D Human Posture Estimation and Musculoskeletal Regression

- **Project Description:**

Applications are invited for a funded 3-year PhD studentship in Computer Vision and Deep Learning. This project will develop state-of-the-art algorithms and software solutions in exploiting and making advances in computer vision and deep learning techniques to move toward intelligent understanding of human body and musculoskeletal with visual data. In particular, the latest advances in computer vision and deep learning will be explored significantly to estimate appearance-based 3D human body poses and regress concurrent muscle activations.

The research project aims to make an important step in bringing recent computer vision techniques to understand the detailed, musculoskeletal-level physics of human movement and make a breakthrough in cervical dystonia diagnosis and assessment. This research brings together a multidisciplinary team of world-leading experts on AI (computer vision), sports science (muscle mechanics) and Neurology (dystonia) in order to fulfil the novel and important research objectives of the project. Furthermore, in this research, multimodal data including a motion capture data (Qualisys) and EMG (Electromyogram) sensor data, and human body simulators would be combined as well as vision data.

The successful candidate will join the Intelligent Robotics Lab at the School of Computer Science, University of Birmingham. You will be supervised by Dr. Hyung Jin Chang ([https://www.cs.bham.ac.uk/~changhj](https://www.cs.bham.ac.uk/~changhj)).

- **Requirements:**

Applicants should have a first class or good upper second in Mathematics, Statistics, Computer Science, or closely related field. Applicants also need to have a strong background in mathematics and high proficiency in programming, e.g., Python, C++ or Matlab. Excellent coding skills with good understanding on deep learning, and paper publication experiences would be highly beneficial. An MSc project in machine learning, deep learning or computer vision related areas would be beneficial but not essential.

Note: ONLY UK and EU applicants are eligible for this studentship; unfortunately, applicants who are classed as Overseas for fee paying purposes are NOT eligible for funding.

- **Apply**

[https://sits.bham.ac.uk/lpages/EPS003.htm](https://sits.bham.ac.uk/lpages/EPS003.htm)