**Project title:** Development of a customized tool for diagnosis and treatment of foot disorders

**Degrees on offer:** MSc (research 1 year) or MPhil (2 years)

**Institute:** Department of Electronic and Telecommunication Engineering, University of Moratuwa

**Supervisor:** Dr. Pujitha Silva

**Collaborators:** Dr. Anjula De Silva (University of Moratuwa)

Prof. Saroj Jayasinghe (Colombo Medical Faculty),

Dr Inoshi Athukorala (Colombo Medica Faculty)

**Degree starting date:** Early August, 2015

**Abstract:**

The human foot is a complex structure with bones, muscles, joints and other tissue. It is the only body part which stays in contact with the ground and therefore plays a significant role in locomotion, impact bearing and vertical stability. This makes foot disorders that affect ambulation both physically and psychologically detrimental for the day to day wellbeing of any individual. This study looks into the development of a systematic procedure, tools and accessories for the diagnosis and treatment of foot related disorders by analysing foot biomechanics. The research will aim to understand whether measuring the internal stress distribution pattern in obese patient populations, is an essential precursor to effective treatment. The project will cover a) 3D finite element modelling of the foot and corrective behaviour b) analyse mechanical stress under different conditions c) enable 3D printing of a customizable shoe to minimise damaging stresses

**Stipend:** Rs. 480,000 per annum + teaching assistant.

**Eligibility:** Enthusiastic and self-motivated candidate with a strong interest in biomedical engineering and biomechanics in particular. The ideal candidate would have exposure or experience in Finite Element modelling.

**Minimum entry qualification:** An honours degree specialised in mechanical, mechatronics or biomedical engineering disciplines. Other related fields of specialisations can also be considered.

**Funding:** Senate Research Council of University of Moratuwa grant - Rs. 3.9 million

**To apply:** Please send a copy of your CV to [psilva@uom.lk](mailto:psilva@uom.lk) or call +94 777 052 7954