

2025 EECMS Summer Internship Application Form

Main Supervisor	Nimsiri Abhayasinghe
Other supervisors (if applicable)	Anuradhi Welhenge
Project Title	The Effects of Common Footwear on Knee joint and Hip joint
Student location(s) for the project	Bentley
Duration of project	Eight weeks
Project Description	<p>Traditionally, footwear has been engineered to provide maximum foot support and comfort. Lately, footwear designs are more oriented for fashion, and little attention has been paid to the mechanical effects of shoes on the rest of the lower extremity. However, the entire lower extremity is known to be an interrelated functional and mechanical unit, and alterations at one aspect of the lower extremity (e.g., the foot) can have significant impact on distant areas such as the knee. Therefore, the design of footwear itself may substantially affect the knee joint and hip joint, and these biomechanical effects may have important implications for spinal injuries.</p> <p>This study will compare the effects of several common shoe types on knee joint and hip joint in subjects using IMUs attached to the knee and the hip. Candidates will be developing a hardware required for the data caption and collect data from subjects with no impairment while wearing different footwear.</p>