

When: Friday 15:00 – 15:30, September 20, 2019
Where: ETB 1035

Speaker: Ahnsei Shon

Ph.D. Student in Prof. Hangu Park's Group
Department of Electrical and Computer Engineering
Texas A&M University



Title: **A Fully Implantable Closed-loop
Stance Detection and Plantar Cutaneous Augmentation System to
Promote Gait Rehabilitation after Spinal Cord Injury**

Abstract: Sensory feedback from a moving limb plays a pivotal role in generating muscle activities for locomotion. For gait rehabilitation after spinal cord injury (SCI), to provide the sensory feedback to the spinal cord, body weight supported treadmill training (BWSTT) have been most commonly used. Recently, epidural stimulation is attracting much attention for gait rehabilitation after SCI. However, the effectiveness of BWSTT and epidural stimulation on human gait rehabilitation is limited because of reduced leg loading and low stimulation selectivity. To compensate these limitations, we present a new methodology augmenting tactile feedback from the foot sole with synchronized distal-tibial nerve stimulation by using a newly developed fully implantable device for gait rehabilitation after SCI.

Bio: Ahnsei Shon received the B.S. degree in electronics engineering from Korea University of Technology and Education, ChungNam, Korea, in 2009, and M.S. degree in biomedical engineering from Yonsei University, Seoul, Korea, in 2011. From 2011 to 2014, he was a Research Scientist with the Korea Institute of Science and Technology, Seoul, Korea. He is currently a Ph.D. student at the Department of Electrical and Computer Engineering, Texas A&M University, TX, USA. His research interests include neural interface systems for gait rehabilitation and bowel movement after spinal cord injury.