



이름: 손정우/Jeong-woo Sohn
직위: 교수/Professor
소속: 가톨릭관동대학교 의학과/Catholic Kwandong
University, Department of Medical Science
기타소속: 국제성모병원/International St. Mary's hospital

강연제목: 영장류 동물 모델을 이용한 뇌-기계

인터페이스 연구/Brain-machine interface researches using non-human primate model

Abstract

A brain machine interface (BMI) is a direct communication channel between the brain and artificial devices. One of most representative application of BMI is an upper-limb BMI with which fine control of robot arm and hand movement with thought is possible for patients with paralysis. Neural signals in such fine control of upper-limb BMI are usually acquired using implantable devices. Historically, due to the invasiveness, those BMI have been developed on the non-human primate (NHP) animal model first. Then, they were applied to human patients later. Obviously, the BMI experimental approaches are different between NHP model and human patient. Our lab has executed researches on BMI study on NHP for last couple of years. In this talk, I will share our experience on the development of BMI system on the NHP model.

Brief Biosketch

가톨릭관동대 의학과에 재직중인 손정우 교수는 서울대학교에서 학부 원자핵공학, 대학원에서는 인지과학을 전공하였다. 미국 로체스터 대학에서 뇌인지과학에서 박사학위를 받았으며, 피츠버그 대학에서 포스닥 연구원 생활을 하였다. 이 기간 동안 그는 전기 생리학 방법론과 영장류 동물 모델을 이용하여, 운동 기능에 대한 뇌 연구를 진행하였다. 이후 한국에서 대구경북첨단의료산업진흥재단의 책임연구원으로 재직하였다. 이후 현재 포지션에서 뇌-기계 인터페이스 연구를 수행 중이다. 연구 관심사로는 뇌-기계 인터페이스를 포함하여, 운동기능의 신경생리학, 신경 윤리 등이다. 현재 그는 국제성모병원 뇌과학중개연구소장을 맡고 있다. / Professor Sohn, who is working in the Department of Medical Science at Catholic Kwandong University, majored in nuclear engineering at Seoul National University and cognitive science at graduate school. He received his Ph.D. in brain cognitive science from the University of Rochester in the United States and worked as a research fellow at the University of Pittsburgh. During this period, he conducted brain research on motor function using electrophysiological methodology and primate animal models. After returning to Korea, he served as a principal researcher at KMEDI hub. Then, he has moved to his current position conducting brain-machine interface research. His research interests include brain-machine interfaces, neurophysiology of motor function and neuroethics. Currently, he is the director of the Institute for translational study of Brain Science at the International St. Mary's Hospital.