고려대학교 KOREA UNIVERSITY 뇌공학과

BK21 플러스

Distinguished Lecture Series

Deep Learning for Medical Image Analysis

연사: Dinggang Shen 교수

소속: University of North Carolina at Chapel Hill

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장소: 우정정보관 604호

Abstract

This talk will discuss some of our recently developed deep learning methods for various neuroimaging applications. Specifically, **1)** in **neuroimaging analysis**, we have developed an automatic brain measurement method for the first-year brain images with the goal of early detection of autism such as before 1-year-old. This effort is aligned with our recently awarded **Baby Connectome Project (BCP)** (where I serve as Co-PI), which will acquire MR images and behavioral assessments from typically developing children, from birth to five years of age. Besides, we have also developed a novel landmark-based deep learning method for early diagnosis of **Alzheimer's Disease (AD)** with the goal of potential early treatment. **2)** In **image synthesis**, we have developed a cascaded 3D CNN for reconstructing 7T-like MRI from 3T MRI for simultaneously enhancing image quality and tissue segmentation. Also, we have developed a novel Generative Adversarial Networks (GAN) based technique to estimate CT from MRI, for helping MRI-based cancer radiotherapy. All these techniques will be introduced in this talk, for the goal of early diagnosis of brain disorders.

주최: 고려대학교 BK21플러스 뇌공학글로벌인재양성사업단
후원: 고려대학교 뇌공학과, 뇌공학연구소, 뇌인지과학 융합전공, 인공지능연구센터
문의: T. 3290-5920