

CGV Seminar Series
November 23 (Friday) 2012
1:30 ~ 2:30 PM
전산학과 2층 제1세미나실 (#2452)

Computational and Scalable Neuroimage Analysis

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In this talk, I will introduce an emerging research area, computational neuroanatomy, with emphasis on convergence technology between computer science and brain science. Computational neuroanatomy deals with computational problems arising from quantification of structures and functions of human brains by exploiting non-invasive brain imaging modalities such as magnetic resonance imaging (MRI) and diffusion tensor imaging (DTI). A major challenge in this field is raised by massive high-dimensional non-Euclidean imaging data, which are difficult to analyze using available techniques. In this talk, I will show that computational approaches can provide both effective and efficient solutions to those challenges. As examples of those solutions, I will present some of my recent research projects on computational neuroanatomy: surface-based brain morphology analysis and diffusion tensor-based connectivity analysis. By combining these techniques, I will finally present several intermediate results on multi-modal brain analysis techniques to study a relationship between morphology and connectivity of human brains.