When: **Friday 15:00 – 16:00**
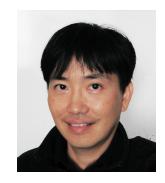**Where:**   **HRBB 204**
Coordinator: **Xiaoning Qian** (xqian@ece.tamu.edu)

Speaker: **Prof. Yoonsuck Choe**

Professor
Department of Computer Science & Engineering
College of Engineering
Texas A&M University

Title: **Questioning Questions in Computational Neuroscience**
Date: **10-21-2016**

Abstract: In this presentation, I will discuss several key questions in computational neuroscience and see how posing the questions slightly differently can potentially lead to new insights. First I will consider the question of neural encoding/decoding and show that this could lead to problems due to its third-person view. These problems can only be solved when the question is posed in a first-person perspective. Next, the question of how the brain stores and retrieves memory will be assessed. Instead of "how", we can ask "for what" and "where", which can lead to some interesting connections to prediction and memory outside of the brain. Finally, I will touch upon the topic of connectomics. One of the main research questions in connectomics is how to acquire the connectome.   I will argue that we need to ask more about how to analyze the connectome, but is the connectivity alone sufficient for the analysis? As a first step in addressing this issue, I propose synthetic connectomics, the analysis of artificially evolved controller neural networks in small task domains.

Biography: Yoonsuck Choe is a professor of Computer Science and Engineering and director of the Brain Networks Laboratory at Texas A&M University. He received his B.S. degree in Computer Science at Yonsei University, and his M.A. and Ph.D. degrees in Computer Science at the University of Texas at Austin. His research interest is broadly in computational neuroscience, with works ranging from self-organization of the visual cortex, predictive dynamics, sensorimotor learning, high-throughput brain imaging, and connectomics.