



Distinguished Lecture Series

Deep Neural Networks – A Developmental Perspective



Tuesday, December 22th, 2015 10:00am
Auditorium at the Center of Academic Activities

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Abstract

There is a recent surge in research activities around the idea of the so-called “deep neural networks” (DNN). While the ideas around neural networks have enjoyed cycles of enthusiasm, which may continue its ebb and flow, concrete and impressive advances now abound. As a technical topic, DNN is important in classes and several tutorial articles and related learning resources are available. Streams of questions, nonetheless, never subside from students or researchers and there appears to be a frustrating tendency among the learners to treat DNN simply as a black box. This talk, commentary in nature, has the intent to discuss how to properly understand DNN, not just its mechanism (what and how) but its motivation and justification (why). The talk is given from a developmental perspective with a comprehensive view, from the very basic but oft-forgotten principle of statistical pattern recognition and decision theory, through the stages of problems that are encountered during system design, to key ideas that may lead to possible new advances towards deep learning. The talk will also review some historical aspects that are deemed helpful in reaching an insightful understanding of the subject.

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