

SIGML

SPECIAL INTEREST GROUP IN MACHINE LEARNING

Title: Restricted Boltzmann Machine

Speaker: Arnab Ghosh (Senior Undergraduate Student)

Day: October 3, 2015, Saturday

Time: 12:00 PM

Venue: KD102 (CSE main)

Abstract

Deep learning is a set of algorithms that attempt to model high-level abstractions in data by using architectures composed of multiple non-linear transformations

Restricted Boltzmann Machines are probabilistic graphical models that can be interpreted as stochastic neural networks . The increase in computational power and the development of faster learning algorithms have made it applicable to relevant Machine Learning problems . They are the building blocks of Multi Layer Deep Belief Networks.

They have successfully been used as generative models for both supervised and unsupervised learning problems. It has been successfully used to augment current Collaborative Filtering algorithms for improving Recommender Systems and has seen successful use in the Netflix Challenge.

In this presentation I would like to talk about energy based graphical models , introduce Boltzmann Machines and particularly Restricted Boltzmann Machines . I would present some of the interesting embeddings represented by the hidden layers acting like feature detectors. I would also like to highlight how it has been successfully employed in real world problems like recommender systems.