## Astronomy & Astrophysics Division Seminar

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Title : Deep learning in astronomical research

Speaker : Mr. Vaibhav Dixit (PRL, Ahmedabad)

Date : 12.10.2017 (Thursday)

Time : 16:00 Hrs

Venue : Seminar Room # 113/114 (Thaltej Campus)

**Abstract:**

Artificial Intelligence (AI) is the capability of the machines to perform a task intelligently like humans. Deep learning is a subset of AI which takes inspiration from model of human brain. It is based on neural networks with several layers of nodes. Deep learning encourages computational models that are built on multiple layers to learn representations of data with multiple levels of abstraction. It has surpassed the human performance in several trivial tasks like image recognition and segmentation as well as found applications in various commercial activities like self-driving cars, stock market prediction, cancerous tissue identification and production line performance etc. Given the sheer magnitude of projects undertaken by various organizations, we would end up having Petabytes of data, and no manpower to go through all of them manually. Under such a scenario, we would need intelligent systems which can devour large data. Higher dimensionality of the data, no prior knowledge of the data generation process, low signal to noise ratio and missing information are some other limiting factors in analysis done by humans. However deep learning overcomes these challenges and can open new avenues for scientific research. Deep learning is going to change the way we do science. The talk will focus on some areas of applications of deep learning in astronomy.

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