

# Introduction to Bigdata and Deep Learning for HPC

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# Course Contents

Big Data

Deep Learning

High Performance Computing (HPC)

# Big Data

Big data is a term for data sets that are so large or complex that traditional data processing application softwares are inadequate to deal with them.

Challenges include capture, storage, analysis, data, search, sharing, transfer, visualization, querying, updating and information privacy.

# Deep Learning

Deep learning (also known as deep structured learning, hierarchical learning or deep machine learning) is a branch of machine learning based on a set of algorithms that attempt to model high level abstractions in data.

# HPC

- High-performance computing (HPC) is the use of parallel processing for running advanced application programs efficiently, reliably and quickly. The term applies especially to systems that function above a teraflop or  $10^{12}$  floating-point operations per second.

# Outcomes

- Python's Scripting Language
- C/C++ Data Management
- Caffe Framework
- HPC Application

# Marks distribution

- 40% End-Term
- 30% Mid-term
- 30% Evaluation
- 10-5 % Assignments