15th Afternoon: Blockchain and Public Ledger technology.

i. Cryptocurrencies and Bitcoin.

ii. Cryptography basics (Symmetric and asymmetric ciphers, DH Key exchange, CAs, Public Key Infrastructures)

iii. RSA and SHA256, Digital signatures.

iv. Transactions and Blocks.

v. Hash list and Merkel trees.

vi. Mining and Proof of work.

vii. Byzantine Consensus.

viii. Validation and verification.

ix. Blockchain application areas and why it is the next internet.

16th Forenoon: New generation Data Analytics: Scala and Spark *(full hands-on)*

i. Scala Variable and values

ii. Typing and Type inference

iii. Functional style declarations

iv. Higher-order functions.

v. MapReduce example.

vi. Generalizing the MapReduce.

vii. RDDs and ways to create them.

viii. Basic MapReduce problems.

ix. Word count.

x. KV - Transformations on tabular data.

xi. Time series data.

xii. Writing an RDD.

xiii. Computing Pi using Spark MapReduce.

16th Afternoon: Machine Learning (ML) and Deep learning *(minimal hands-on)*

i. Making sense out of terms

ii. AI, ML, Data Science, BigData

iii. What is data, vectors, Matrices (just basics to go on)

iv. Support Vector Machine Concept and Formulation (very less math)

v. Perceptron / Neuron and Neural network

vi. Deep Neural Networks and Back Propagation training (BPT) (some maths)

vii. Recurrent Neural Networks and BPT through time

viii. Exploding and Vanishing Gradients.

ix. Hands-on using Python and Keras.