Syllabus

by Dr.Geoffrey Fox

big data
applications and analytics
informatics MOOC by Dr. Geoffrey Fox

Section 1: Introduction	Unit 1: Course Introduction Unit 2: Course Motivation: Big Data and Clouds
Section 2: **Data Science Overview**	Unit 3: Part I Unit 4: Part II Unit 5: Part III
Section 3: Tech Training	Unit 6: Python for Big Data and X-Informatics
Section 4: **Physics Case Study** **Looking for Higgs Particles**	Unit 7: Part I - Bumps in Histograms, Experiments and Accelerators Unit 8: Part II - Python Event Counting for Signal and Background Unit 9: Part III - Random Variables, Physics and Normal Distributions Unit 10: Part IV - Random Numbers, Distributions and Central Limit Theorem

Section 5: Tech Training	Unit 11: Using Plotviz Software for Displaying Point Distributions in 3D
Section 6: e-Commerce and Life Style Informatics Case Study	Unit 12: Part I - Recommender Systems: Introduction Unit 13: Part II - Recommender Systems: Examples and Algorithms Unit 14: Part III - Item-based Collaborative Filtering and its Technologies Unit 15: Part IV - k Nearest Neighbor Algorithm Unit 16: Part V - Clustering
Section 7: Infrastructure and Technologies for Big Data X-Informatics	Unit 17: Parallel Computing: Overview of Basic Principles with familiar Examples Unit 18: Cloud Technology Part I: Introduction

Section 7: Infrastructure and Technologies for Big Data X-Informatics	Unit 19: Cloud Technology Part II: Introduction Unit 20: Cloud Technology Part III: Introduction
Section 8: Web Search	Unit 21: Web Search and Text Mining I Unit 22: Web Search and Text Mining II
Section 9: Technology for X-Informatics	Unit 23: PageRank (Python Track) Unit 24: K-means (Python Track) Unit 25: MapReduce Unit 26: Kmeans and MapReduce Parallelism (Python Track)
Section 10: Health Informatics	Unit 27: X-Informatics Case Study: Health