DATA APPLICATION LAB PYTHON AND QUANTITATIVE ANALYSIS

Updated Feb 1, 2016

Syllabus

Class 1 – 4 (Python from scratch + Mini Projects)
Topic 1: Introducing Python
- Python background
- Data types
- Syntax and rules

Topic 2: Advanced Python
- Data structure
- Linked list
- Functions
- OOP
- Algorithms (Interview questions)

Topic 3: Hands on mini projects x 2
- Python app development
- Comprehensive python skills practice
- Involving recent hottest topics in software development industry

Class 5 – 8 Python in Quantitative Analysis (Python in Practice)
Topic 1: Monte Carlo simulation
- Stochastic process
- Variance reduction
- Option pricing – American/ European
- Risk Measurement

Topic 2: Principle Component Analysis & Bayesian Method
- Replicated index
- Bayesian Regression

Topic 3: Foreign Exchange Market Making
Topic 4: Quantitative Finance Interview

Class 9-10 Python Web Project
- Web development using Python (Flask framework)

Capstone Project
- Project: Financial Index Replication using Principle Component Analysis
- Python Visualization