Fall 2020

CS 644-103: Introduction to Big Data

Yao Shen

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Course Syllabus
CS644 – Fall 2020 – Introduction to Big Data

Class Schedule: Thursday 6-8:50pm, KUPF210
Instructor: Yao Shen, email: yshen@njit.edu
TA: Haoran Liu, email: hl425@njit.edu
WebEx link:
Meeting link: https://njit.webex.com/njit/j.php?MTID=m21adb8610735ae91272c61d4bb78362e
Meeting number: 120 724 5124
Password: 2hKJ6ws2SkZ
Host key: 220539

Course description and format:
This course provides an in-depth coverage of various topics in big data from data generation, storage, management, transfer, to analytics, with focus on the state-of-the-art technologies, tools, architectures, and systems that constitute big-data computing solutions in high-performance networks. Real-life big-data applications and workflows in various domains (particularly in the sciences) are introduced as use cases to illustrate the development, deployment, and execution of a wide spectrum of emerging big-data solutions.

Prerequisite:
Some basic knowledge of python programming, SQL programming, Unix, algorithms, and machine learning. If in doubt about the prerequisites, please consult with the instructor for permission to take the class.

Attendance:
You are supposed to attend all the classes. Participation is highly encouraged to make the class more interactive. Class attendance and participation are taken into consideration by the instructor for the evaluation of the students. In general, students who attend class regularly perform much better than those who come only occasionally. If you miss one class be sure to consult one of your classmates about the content of the lecture and visit the course web page and Canvas (canvas.njit.edu) to get notes, exercises, assignments, deadlines and announcements.

Textbooks:
Hadoop: The Definitive Guide. By Tom White
Spark in Action. By Petar Zecevic etc.
Resources:
Additional reading materials including reference books and online resources will be assigned for some advanced topics as the course proceeds.

Grading:
The requirements of this course will consist of participating in lectures, homework, project, midterm exam, and final exam. The grading breakdown is the following:

- Attendance (5%)
- Homework (15%)
- Projects (20%)
- Midterm (30%)
- Final (30%)

Collaboration and Honor Code:
Students may discuss problems together but must write up their own solutions. When writing up the solutions, students should write the names of people, if any, with whom they discussed the assignment. Note in particular that copying homework or programming assignments, in full or in part is forbidden. Students found cheating or plagiarizing will be immediately referred to the Dean of Students and the NJIT Committee on Professional Conduct and subject to Disciplinary Probation, a permanent marking on the record, possible dismissal, and an “F” grade in the course. All submitted assignments will be checked for similarities, and plagiarism and guilty students identified.

Tentative course schedule (Subject to changes according to progress):

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<td>Introduction</td>
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<td>Big Data Ecosystem, Hadoop HDFS</td>
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<td>Week3</td>
<td>Yarn and MapReduce</td>
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<td>Week4</td>
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