USC VITERBI SCHOOL OF ENGINEERING INFORMATICS PROGRAM
INF 550: Overview of Data Informatics in Large Data Environments
Fall 2018 (4 units), 3:30 – 5:20 PM, MW, VKC151

Syllabus

Instructor: Dr. Seon Ho Kim　　　　　　　　Course Producer: Hyunjun Park
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Instructor's Office Hours:

Thursday 3:00 p.m. to 5:00 p.m. in PHE334. Other hours by appointment only. Students are advised to make appointments with the professor ahead of time in any event and be specific with the subject matter to be discussed. Students should also be prepared for their appointment by bringing all applicable materials and information.

Course Description:

This course is designed as an overview course to give non-informatics major students a broad understanding of Informatics topics for big data and to get practical experience with key big data informatics techniques. Topics include roadmap of informatics, the data lifecycle, the role of the data scientist, brief introduction to machine learning and data mining, analyzing and exploring big data with real world use cases, introduction to big data management eco system, and data visualization. Homework assignments and projects will give students practical experience with important topics covered in the course. This class will be primarily individual and/or team study, with assigned readings, homework/projects assignments, a midterm exam, and a final.

Recommended Preparation:

A basic understanding of engineering principles and programming language is desirable.

Books and Readings:

No textbook but reading materials will be provided.

***Lecture notes* will be available in the Class Blackboard.**

Grading:
Exams: 45% (midterm 20%, Final 25%), Homework 20%, Project: 30%, Class preparation: 5%

* The instructor reserves the right to make changes to the grading criteria, assignments and course outline to best serve the needs of the class.

Course Schedule

Week	Topic	Readings
1 (8/20, 8/22)	Class Introduction Introduction to Data Informatics	- Lecture Note
2 (8/27, 8/29)	Overview of Big Data	- Lecture Note
3 (9/5)	Basic Background	**09/03 Labor Day – University Holiday**
4 (9/10, 9/12)	Python and Class Project Discussion	- Lecture Note
5 (9/17, 9/19)	Machine Learning 1	- Lecture Note
6 (9/24, 9/26)	Machine Learning 2	- Lecture Note
7 (10/1, 10/3)	Data Mining 1	- Lecture Note
8 (10/8, 10/10)	Data Mining 2	- Lecture Note
9 (10/15, 10/17)	Project Progress Review Midterm review **Midterm (10/18)**	**Closed Book Exam**
10 (10/22, 10/24)	Introduction to Data Visualization Introduction to Hadoop Ecosystem	Lecture Note
11 (10/29, 10/31)	Introduction to Hadoop Ecosystem	Lecture Note
12 (11/5, 11/7)	Introduction to Hadoop Ecosystem	Lecture Note
13 (11/12, 11/14)	NoSQL	Lecture Note
14 (11/19)	HBase	Lecture Note **11/21 – Thanksgiving Week – University Holiday**
15 (11/26, 11/28)	Ethics, Privacy, Policy in Data Informatics Review for Final Exam	

12/10	Final Exam	2-4 pm

Students with Disabilities:

Any student requesting academic accommodations based on a disability is required to register with Disability Services and Programs (DSP) each semester. A letter of verification for approved accommodations can be obtained from DSP. Please be sure the letter is delivered to me as early in the semester as possible. Your letter must be specific as to the nature of any accommodations granted. DSP is located in STU 301 and is open 8:30 am to 5:30 pm, Monday through Friday. The telephone number for DSP is (213) 740-0776.

Academic Integrity:

USC seeks to maintain an optimal learning environment. General principles of academic honesty include the concept of respect for the intellectual property of others, the expectation that individual work will be submitted unless otherwise allowed by an instructor, and the obligations both to protect one's own academic work from misuse by others as well as to avoid using another's work as one's own. All students are expected to understand and abide by these principles. SCampus, the Student Guidebook, (www.usc.edu/scampus or http://scampus.usc.edu) contains the University Student Conduct Code (see University Governance, Section 11.00), while the recommended sanctions are located in Appendix A.

The University, as an instrument of learning, is predicated on the existence of an environment of integrity. As members of the academic community, faculty, students, and administrative officials share the responsibility for maintaining this environment. Faculties have the primary responsibility for establishing and maintaining an atmosphere and attitude of academic integrity such that the enterprise may flourish in an open and honest way. Students share this responsibility for maintaining standards of academic performance and classroom behavior conducive to the learning process. Administrative officials are responsible for the establishment and maintenance of procedures to support and enforce those academic standards. Thus, the entire University community bears the responsibility for maintaining an environment of integrity and for taking appropriate action to sanction individuals involved in any violation. When there is a clear indication that such individuals are unwilling or unable to support these standards, they should not be allowed to remain in the University."
(http://policies.usc.edu/p4acad_stud/facultyhandbook.pdf)

Academic dishonesty includes: (http://policies.usc.edu/p4acad_stud/facultyhandbook.pdf)

- Examination behavior – any use of external assistance during an examination shall be considered academically dishonest unless expressly permitted by the teacher.

- Fabrication – any intentional falsification or invention of data or citation in an academic exercise will be considered a violation of academic integrity.

- Plagiarism – the appropriation and subsequent passing off of another's ideas or words as one's own. If the words or ideas of another are used, acknowledgment of the original source must be made through recognized referencing practices.

- Other Types of Academic Dishonesty – submitting a paper written by or obtained from

another, using a paper or essay in more than one class without the teacher's express permission, obtaining a copy of an examination in advance without the knowledge and consent of the teacher, changing academic records outside of normal procedures and/or petitions, using another person to complete homework assignments or take-home exams without the knowledge or consent of the teacher.

The use of unauthorized material, communication with fellow students for course assignments, or during a mid-term examination, attempting to benefit from work of another student, past or present and similar behavior that defeats the intent of an assignment or mid-term examination, is unacceptable to the University. It is often difficult to distinguish between a culpable act and inadvertent behavior resulting from the nervous tensions accompanying examinations. Where a clear violation has occurred, however, the instructor may disqualify the student's work as unacceptable and assign a failing mark on the paper.

Return of Course Assignments:

Returned paperwork, unclaimed by a student, will be discarded after a year and hence, will not be available should a grade appeal be pursued following receipt of his/her grade.

Emergency Preparedness/Course Continuity in a Crisis:

In case of a declared emergency if travel to campus is not feasible, USC executive leadership will announce an electronic way for instructors to teach students in their residence halls or homes using a combination of Blackboard, teleconferencing, and other technologies.