General Information, Meeting Times and Location

Catalog Entry: 31601 Lecture CC3 3 hours OR 59276 Lecture CC4 4 hours Graduate OR 59291 Online CCO

Time: 2:00 - 3:20 Tu/Th
Place: 1310 DCL (Digital Computer Laboratory)

Contact Information

Instructor: Roy Campbell
Office: 3122 Siebel Center
Office hours: by appointment through Andrea Whitesell 217-333-2399

Instructor: Reza Farivar
Office: 2118 IGB
Office hours: 3:45 - 5 Thursdays, or by appointment in special cases.
Lync: farivar2@illinois.edu

TA: Imani Palmer
Office: 0207 Siebel Center
Office hours: 10:00am - 12:00pm on Fridays or by appointment
Lync: ipalmer2@illinois.edu

Important Links

Syllabus PDF xlsx
Lectures schedule / Slides: Timetable
Course Projects: Project Ideas
Discussion / questions page: piazza.com/illinois/spring2014/cs498cc/home
Student survey: TBA

Course overview

Topic: This course serves as an introduction to Cloud Computing. The class includes Infrastructure as a Service, Software as a Service, and Platform as a service, Map Reduce and Big Data, as well as privacy and legal issues. The class will include the problems and solutions to cloud computing, including hands on laboratory experiments (Hadoop, Hive, Storm, Hbase, ...). Topics include scheduling, resource allocation, energy efficiency, security and monitoring, availability and consistency, data center networks, pricing model, applications and extensions of the cloud platform. Case studies will be drawn from Yahoo, Google, Twitter, Facebook, scientific computation, data mining and machine learning.

CS498 CC: 3 hours undergraduate, 4 hours graduate with project, 4 hours on-line section.
Prerequisites: CS125, 225. Knowledge of one or more of the following would be helpful: CS410 (Data Bases), Data Mining, Machine Learning, CS241 Systems Programming, CS423 Operating Systems, CS410 Parallel Programming.

Lectures
You are responsible for knowing about all announcements made in lecture. We will discuss expectations about the project, suggestions for how to succeed, and grading guidelines in class, and general class policy issues, so make sure you don't miss any lectures.

**Team Formation**

Do your best to form teams on Piazza and here, teams should be formed as quickly as possible so that people can be assigned their keys to work on mp0. To check your team number please click here.

**Assignments**

**MP0**

**MP1**

Sign up for a slot to demo MP1

**MP1 Demo Times**

Midterm 1: Study Topics

**MP2**

Sign up for a lot to demo MP2

**MP2 Demo Times**

**MP3**

**MP4**

**4 Unit Project**

Midterm 2: Study Topics

**MP5**

4 credit presentations - on Wednesday May 1 (put together a 3-5 minute powerpoint presentation and email it to the TA. If you are an online student and don't have an onsite student to present, email the TA.

**Final Exam, cumulative covering all lectures, Monday 5/6, 7-10pm in Transportation Building 103**

**4 Unit Project** Final Project Report - due 5/6

**4 credit hour students**

**4 Unit Project** - link to put down project proposals and teams for the students taking for 4 units.

- Students taking the class for 4 hours will solve a data intensive computing problems of their choice. These problem will involve one or more of the following systems: Hbase, Mahout, Giraffe, Pig, Hive, Cassandra, Zookeeper, Mapreduce, EC2. They need to get approval from the instructor and can solve the problem in teams of up to three students.

**Grading**

Compass or Blackboard 2 will be used for disseminating grades

Attendance is required, and will be enforced. **Missing more than 4 lectures will result in failing the course.** Please read the UIUC policy on acceptable absences here.

The final grade for the class is composed of the following:

- 2 mid term exams (multiple choice or text box): 20%
- 5 Laboratory MPs: 50% (20% of each mp grade based on collaboration-Prof review)
- Final exam (multiple choice or text box): 30%

The grade for 1 hour additional credit is split as following:

- Solve a Data Intensive Problem 70%
• Report on each solution 10%
• Collaboration with colleagues 20% - Prof Review

Code of Conduct Policy
Cheating, plagiarism, collusion, and falsifying academic records will not be tolerated and will result in a failing grade on the particular assignment, exam, or course. If you are caught cheating, you will not be allowed to drop or repeat the course. If you are caught cheating on assignments and/or exams more than once, you may be removed from the program. The department is equipped with tools to easily identify when students have cheated. Individual instructors may have additional restrictions in their courses in addition to the ones stated above.

Facilities

<table>
<thead>
<tr>
<th>Cloud</th>
<th>Description</th>
<th>URL</th>
<th>Usage</th>
</tr>
</thead>
<tbody>
<tr>
<td>CCT</td>
<td>128 x P2 quad-core CPUs, 16 GB RAM, 2 TB storage</td>
<td><a href="http://cloud.cs.illinois.edu/">http://cloud.cs.illinois.edu/</a></td>
<td>Map Reduce</td>
</tr>
<tr>
<td>Phoenix</td>
<td>60 x 2 CPU, 12 GB RAM, 60 GB SSD, 500GB storage</td>
<td>Phoenix (HP PE 1450), OpenFlow HP</td>
<td>Cloudstack, Hbase, Mahout, Projects</td>
</tr>
<tr>
<td>Mustang</td>
<td>16 x 12 CPU, 128 GB RAM, 240GB SSD, GPU, 8TB Storage</td>
<td>Mustang (Dell 720) File Server 48TB, Openflow HP</td>
<td>Openstack</td>
</tr>
<tr>
<td>Azure</td>
<td>60xsmall compute instances, 5 TB storage</td>
<td><a href="https://manage.windowsazure.com">https://manage.windowsazure.com</a></td>
<td>Distributed Systems</td>
</tr>
<tr>
<td>AWS</td>
<td>Educational Developer</td>
<td><a href="https://cs498staff.signin.aws.amazon.com/console">https://cs498staff.signin.aws.amazon.com/console</a></td>
<td>Distributed Systems</td>
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Emergency Procedures

General Emergency Response Recommendations
-- Find these recommendations as a Microsoft Word file here...

Navigate space