SP 2020 – CSCI 4795/6795 Cloud Computing

In Kee Kim
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The University of Georgia
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1 General Information

- Instructor: In Kee Kim (inkee.kim@uga.edu)
- Class meeting time and location:
  - Tue and Thurs: 9:30 – 10:45 a.m. @Dawson Hall 0206
  - Wed: 10:10 – 11:00 p.m. @Dawson Hall 0312
- Office Hours/Location:
  - Instructor Office Hour: 11:00 a.m. to 12:00 p.m., Loc: 802 @Boyd GSRC (from Jan/13 – no office hour in the first week)
  - TA Office Hour: Will be announced later.

2 Course Overview

Cloud has become a *de facto* computing infrastructure in many business and research organizations to deliver various user-facing, business, and scientific applications to end users. In this course, you will learn the underlying technologies and concepts that create the current cloud computing and infrastructure, and obtain hands-on experience in designing and implementing modern cloud applications.

This is an introductory cloud computing course designed for both senior-level undergraduate students and graduate students. This class will cover the following concepts and topics (*tentative*):

- Concept and Definition of Cloud Computing
- Virtualization and Data centers
- Cloud Service Models: IaaS, PaaS, SaaS
- Public Clouds, Private Clouds, and Hybrid Clouds
- Cloud Resource Management
- Cloud Infrastructure Management Systems
- Cloud Storage, NoSQL, and Distributed Key/Value Store
• Containers and Microservices
• Container Orchestration Systems like Kubernetes and Docker Swarm
• Cloud Function and Serverless Computing
• Cloud Security
• Cloud IoT, Edge/Fog Computing, Mobile Clouds
• Big Data Processing Frameworks – Hadoop, Spark, Storm.
• TensorFlow and Cloud Systems for Machine Learning

Prerequisite: CSCI 2720 – “Data Structures.” In addition, prior knowledge of operating systems, distributed systems, computer architecture, and computer networks will be a plus.

Textbooks: This class does not require a textbook, but there are two optional textbooks/references:


The lecture will be based on the slides provided by the instructor. Also, the students will be required to read research papers and web documents about cloud computing.

3 Grading
3.1 Distribution

<table>
<thead>
<tr>
<th></th>
<th>Undergrad</th>
<th>Graduate</th>
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</thead>
<tbody>
<tr>
<td>Programming Assignment (4+ assignments)*</td>
<td>50%</td>
<td>40%</td>
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<tr>
<td>Midterm Exam†</td>
<td>20%</td>
<td>20%</td>
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<tr>
<td>Final Exam†</td>
<td>25%</td>
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<tr>
<td>In-class Participation/Quiz</td>
<td>5%</td>
<td>5%</td>
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<tr>
<td>Paper Presentation</td>
<td>–</td>
<td>10%</td>
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<tr>
<td>Total</td>
<td>100%</td>
<td>100%</td>
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*Late Policy for Programming Assignments: Less than 24 hours late – 10% penalty. 24 to 48 hours late – 20% penalty. Later than 48 hours – 0 pt.

*No email submission allowed for Programming Assignments.

†Both exams are closed-books/notes.

Regrade Request: Within one week of distribution of your grade. After one week, regrade requests will not be considered.
3.2 Grade Cutoffs
This class uses the standard grade cutoffs.

- A: [93, 100]
- A-: [90, 92]
- B+: [87, 89]
- B: [83, 86]
- B-: [80, 82]
- C+: [77, 79]
- C: [73, 76]
- C-: [70, 72]
- D+: [67, 69]
- D: [63, 66]
- D-: [60, 62]
- F: [0, 59]

4 Academic Honesty
All students must follow the Academic Honesty Policy of the University of Georgia. Dishonest behavior will not be tolerated and will result into failing the course. The detailed information of this policy can be found at https://honesty.uga.edu/Academic-Honesty-Policy/. If there are any issues regarding this policy, please contact the instructor immediately.