Syllabus of CSCI 335 Software Design and Analysis III

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1 Course Summary

This course is a sequel to CSCI 235 Software Design and Analysis II. However, we will cover basic topics such as how to use stack and sorting algorithms. So questions are welcome even you think that might be too simple. Its principal objective is to expand on topics in the design and analysis of algorithms and data structures. This includes the introduction of the stack, queue, heaps, hash table, union-find, trie, various forms of trees, and graphs. It also revisits recursion and the sorting problem from a higher perspective than was presented in the prequels. On top of this, we will talk about advanced algorithms such as shortest path, minimum spanning tree, and some classical dynamic programming. Finally, we will analyze the algorithm during the whole lecture. We will use free online coding judges such as LeetCode to help students sharpen their coding skills and enhance their understanding of algorithms.

2 Prerequisites

Prerequisite: Basic coding experience. Discrete math will be better. It is totally fine if you have't taken the Discrete math yet.

3 Textbook

All textbooks are optional. Check our first lecture slides.

4 Assessment

Grades will be based on:

- Assignments 60%
- Middle 20%
- Final 20%

The grading will be on a 100-point scale.
Please submit the assignments on the black board. There will be a penalty for assignments submitted late, which is moderate but increasing and unspecified.
We do have extra credits. It contains two parts: Class participation and LeetCode weekly and Biweekly contest. You have to do either one of them well if you want to get an A+.

5 ACADEMIC INTEGRITY

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6 ACCESSIBILITY SERVICES

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7 Instructor

Instructor:Xiaoke Shen, Email: jim.morris.shen@gmail.com, Office Hours: by appointment
About the instructor: Xiaoke(Jimmy) Shen was supervised by Professor Ioannis Stamos and finished his Ph.D. from the Graduate Center of CUNY. He was interning at Google during 2018. Now he is working as a data scientist and software engineer at a MIT start up.