CS724-Topics in Algorithms
SPRING 2024

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Office hours: MW 2:30 - 4:00 pm

This page is posted on www.cs.umb.edu/~dsim; on the same site you will find copies of the slides I am using in class, homeworks, and handouts relevant to the course. You should visit it often!

The current version of this course focuses on linear algorithms, that is, on algorithms based on linear algebra. After an introductory part that discusses topics not covered typically in linear algebra classes (such as spectral theory, singular values of matrices, tensor calculus, etc), we will discuss algorithmic topics such as:

- Data matrices
- Dimensionality reduction techniques
- Least square approximation
- Support Vector Machines
- Neural networks
- Recommender systems
- Clustering
- Quantum computing algorithms

The primary source of this course are the slides posted at the above address. I will indicate other bibliographic sources and post handouts on the course web site.

Homework should be entirely the product of your work; you may discuss it with colleagues and I encourage you to talk to me if you have difficulties. Cheating in any form will be severely sanctioned. Learn LaTeX and use it to write your homeworks. We will have five or six homeworks. These homeworks and class participation determine your grade. This course will use MATLAB which can be obtained freely from the University.

Feel free to record the lectures, and update regularly the files you download from the site.

I hope that you will enjoy the course!