

CS 454 Section 1 – SPECIAL TOPICS – SAT 910-1 (CS 594 Section 1 has been cancelled)

The number of web pages on the World Wide Web has exceeded its billionth page marker. The ability to retrieve relevant information is an integral and vibrant requirement for all net users. On the surface, the simplicity and richness of search services provided by web search engines search as Yahoo and Google belies the wealth of underlying information architecture, organization, and archive and retrieval technology.

The three fundamental building blocks to information retrieval and search engines are: (1) identifying targets or search pages, (2) extracting relevant metadata information from these pages, and (3) archive and organize these metadata information for rapid retrieval. Information architects and engineers are wrought with engineering challenges to achieve these goals. These challenges include problems relating to scalability, reliability, robustness, and unconstrained search domains. While many of these challenges have been met one way or another and are presented in the course readings, many remain open-ended research topics.

This course will cover web search engines and their foundation, principles, and elements. The class will include lectures on topics relating specifically to search engine technologies and on supplemental paper reading assignments.

There will be 3 quizzes that are based on textbook and papers. The course will also include 4 programming assignments using Apache open source tools, i.e. Tika and Lucene and/or Nutch. These homework assignments culminate a final project, a fully functional search engine. Students will engage in a team or individual project to leverage the search engine techniques learned during the course (e.g., *ranking, crawling, content analysis and detection, and query models*).

Week 1-2: Introduction, Architecture of Search Engine

Week 2-4: Crawls and Feeds

Week 4-5: Text Processing

Week 5-6: Ranking and Indexing

Week 6-8: Queries Interfaces

Week 9: Query Models

Week 10: Building a Complete Search Engine Using Open Source Software

CS 454 - CompSciSeminar/594 MobileDevelopment Section 2 – SPECIAL TOPICS – TR 1140-120

YOU MAY NOT REPEAT THIS CLASS IF YOU HAVE ALREADY TAKEN MOBILE DEVELOPMENT WITH PROFESSOR HAJIANPOUR IN WINTER 2012

- a) Understanding of mobile development SDKs for the Android Mobile platforms. This course will introduce students to the basics of Android programming with the goal of enabling students to create Android apps. We will overview the Android platform, the basics of the Activity Class, intents, user interfaces, notifications, alarms, networking, sensors, locations/maps, and persistence using SQLite. Projects utilizing mobile development and cloud computing. Labs to demonstrate understanding of technologies and architectures.
- b) Prerequisites: CS203/CS312