Information Visualization Syllabus

Course: CS 67302/77302, Spring 2020  Time: Tuesday, Thursday 12:30 pm - 1:45 pm
Room: MSB 109

Instructor:
Ye Zhao, Professor Office: MSB 220  Email: zhao@cs.kent.edu
Office Hours: Office Hours: Tuesdays and Thursdays 11am-12pm

Goal:
Information visualization is the science that unveils the underlying structure of data sets using visual representations that utilize the powerful processing capabilities of the human visual perceptual system. In this class, we will study algorithms and systems for visually exploring, understanding, and analyzing large, complex data sets. Information visualization focuses on abstract data such as symbolic, tabular, networked, hierarchical, or textual information sources. The objectives of the course are to learn the principles involved in information visualization and a variety of existing techniques and systems. The students will also gain backgrounds and skills that will aid the design of new, innovative visualizations in realistic applications.

Topics: Topics of this course include

1) Multidimensional visualization, tree visualization, graph visualization, geographical, and time series data visualization techniques;
2) Visual perception, cognitive issues, evaluation, as well as other theory and design principles behind information visualization;
3) Visual analytics techniques and systems, and applications
4) Basic interaction techniques such as selection and distortion; evaluation;
5) Programming of information visualization applications and systems.

Prerequisite:
Basic math contents and basic programming knowledge and skills will be involved.

Programming:
This class will involve programming projects with a medium to heavy programming load, including coding, debugging and team work. You might need to conduct extra efforts and working load if your programming skills need to be trained and improved. Programming skills such as Python or Java Script is needed. This is an advanced class and we will not teach basic programming skills.

Grading:
1) Class participation: 10%; It will be checked occasionally and randomly. If you got sick/have reasonable excuses, please let me know early by emails.
2) Reading and presentation: 20%; Almost each class I will give reading assignments of technical papers. Moreover, each student will be required to give a presentation of one technical paper during the semester.
3) Paper examinations: 40%; Two paper-based exams will be given during the semester. You will be asked to answer questions of general knowledge we studied on class and on your readings.
4) Projects: 30%; Programming projects will be evaluated by your project design, work load, and results.
Technical paper resources: you can access papers through KSU’s library portal of IEEE Xplore library. Here are the links to find technical papers

Text:  There is no required textbook for this course. We will make class notes available. Many recent papers in the field will be read in the class.
A list of books is recommended:
Visualization Analysis and Design Tamara Munzner, Ak Peters, 2014

Registration
The official registration deadline for this course is Jan. 19, 2020. University policy requires all students to be officially registered in each class they are attending. Students who are not officially registered for a course by published deadlines should not be attending classes and will not receive credit or a grade for the course. Each student must confirm enrollment by checking his/her class schedule (using Student Tools in FlashLine) prior to the deadline indicated. Registration errors must be corrected prior to the deadline. The last day to withdraw is March 22, 2020.

Academic Integrity:
University policy 3-01.8 deals with the problem of academic dishonesty, cheating, and plagiarism. None of these will be tolerated in this class. The sanctions provided in this policy will be used to deal with any violations. If you have any questions, please read the policy at http://www.kent.edu/policyreg/policydetails.cfm?customel_datapageid_1976529=2037779 and/or ask.

Students with Disabilities:
University policy 3-01.3 requires that students with disabilities be provided reasonable accommodations to ensure their equal access to course content. If you have a documented disability and require accommodations, please contact the instructor at the beginning of the semester to make arrangements for necessary classroom adjustments. Please note, you must first verify your eligibility for these through Student Accessibility Services (contact 330-672-3391 or visit www.kent.edu/sas for more information on registration procedures).