



Course Syllabus: Special Topics in Visualization - CS 390H

Division	Computer, Electrical and Mathematical Sciences & Engineering
Course Number	CS 390H
Course Title	Special Topics in Visualization
Academic Semester	Spring
Academic Year	2019/2020
Semester Start Date	01/26/2020
Semester End Date	05/13/2020
Class Schedule (Days & Time)	09:00 AM - 10:30 AM Wed Thu

Instructor(s)

Name	Email	Phone	Office Location	Office Hours
Ivan Viola	IVAN.VIOLA@KAUST.EDU.S A	+966128080617	2115, 1, Al- Khawarizmi (bldg. 1)	Sundays 9:00-10:00

Teaching Assistant(s)

Name	Email
Ondrej Strnad	ondrej.strnad@kaust.edu.sa

Course Information

Comprehensive Course Description	<p>Lecture Description – The course starts by discussing the role of human visual perception in visualization. Then illustrative techniques that directly take the human processing into account in designing effective visualizations are explained. First algorithms for effective visual appearance models are explained, such as illustrative shading and line drawing techniques. Afterwards, techniques that expressively convey data insights, such as visibility management techniques, guidance, and navigation techniques are covered. Finally the course introduces various forms of experimental research for visualization design on how to design a user experiment and how to analyze it.</p> <p>Journal club – Each lecture will be matched with a reading assignment, papers related to the lecture are presented by the students. Students can also present another recent paper they read and think it is worth to present to other students.</p> <p>Project – Students will define with the lecturer a course project where one new visualization technique will be implemented over the course of the entire semester. There will be one presentation of the work in progress in the middle of the semester and the final presentation will be scheduled at the end of the semester.</p>
Course Description from Program Guide	
Goals and Objectives	The course deepens the knowledge of the visualization in relation to its human-centric aspects. After completing the course, students have enough of knowledge on how to take human visual perception aspects into account in visualization design, how to adapt visualization concepts from non-algorithmic hand-crafted designs and how to evaluate the user performance in particular task carried out through visualization.
Required Knowledge	Calculus, linear algebra, statistics, programming Visualization and computer graphics are recommended pre-requisites however not strictly required.
Reference Texts	Technical, survey papers, or textbooks will be referenced on individual lectures.

Method of evaluation	70.00% - Course Project(s) 30.00% - Scientific review article presentation
Nature of the assignments	Assignments are meant as reading assignments which the students present within the course's journal club.

Note

The instructor reserves the right to make changes to this syllabus as necessary.