

INFO I590 Interactive Visual Analytics

Instructor: Khairi Reda (redak@iu.edu)

Credits: 3

Prerequisite(s):

Students are expected to have prior programming experience in a high-level language (e.g., JavaScript, Java, Python, C/C++, C#). The course will use JavaScript as a development language, so you should be comfortable learning JavaScript quickly if needed (we will devote some time in the course to bootstrap this skill). Experience in web development languages (e.g., JavaScript, HTML, CSS), while not necessary, will be very useful.

Instruction Mode: This course is offered on-campus

Course Description

This course will introduce students to core techniques and principles in visual analytics. The main goal of this course is to understand how interactive visual representations can help in the analysis and understanding of complex data. Students will learn how to design and create effective visualizations to explore and analyze a variety of data types. Topics covered include: fundamentals of human visual perception and cognition, visual data encoding, interaction techniques, and analytical techniques (e.g., clustering and dimensionality reduction). We will also cover a wide variety of visual representations including basic statistical plots, graphical maps, graphs, treemaps, and small-multiples. As part of the course, students will develop significant projects to create their own web-based visualizations using HTML, JavaScript, and D3. By the end of the course, students will become conversant with a collection of visualization techniques and develop competence to undertake advanced research in visualization and visual analytics.