CSCI 4210 U – Information Visualization
Winter 2015 Term Project (26%)

UNIVERSITY OF ONTARIO INSTITUTE OF TECHNOLOGY

Timeline:

March 5: Topic proposal and justification (3%)
March 26: In class progress update
April 9: Class presentations (5%)
April 10: Report Due (18%)

Topic Proposal and Justification (3%)

This project may take one of four forms, listed below. Please note that some forms are more suitable to the desired learning outcomes of COMM students, and others are more suitable for CSCI students. However, you may select any of the forms and make a case for it.

1. Programming
    - Three sub-types
        - Problem-driven design studies (target specific task/data)
        - Technique-driven (explore design choice space for encoding or interaction idiom)
        - Algorithm implementation (demonstrate ideas described in a paper)
    - Most suitable for CS students, less suitable for non-CS students
2. Data Analysis
    - Use existing tools on dataset – you choose the dataset and tools
    - Includes a domain survey report (about existing techniques for analyzing this type of data)
    - Suitable for all (but the expectations are quite high)
3. Survey Paper
    - Detailed synthesis of visualization techniques in a particular domain
    - More suitable for non-CS students
4. Critical Analysis
    - Critique essay on the way visualization is used to communicate about data in a particular domain
    - Gives an opinion, supported by evidence
    - Most suitable for non-CS students, less suitable for CS students

On or before March 5, submit your selection of project type, and your proposal for the topic. Proposals should be 1 page and clearly describe your proposal and any initial findings (e.g. a key paper to start your analysis of the domain, in the case of a survey paper). Each type of topic will lead to a slightly different type of proposal. For example, if you choose “programming” give the sub-type and the target

task/dataset/algorithm you plan to work with. If you choose "survey paper" describe your initial impressions of the domain of interest and show that you have found at least a couple of interesting and relevant papers to start your work. Feel free to consult with the TA or instructor about the proposal requirements.

You will receive feedback within a few days and should wait to continue with your work until you receive an approval. If you wish to start your work earlier, submit your proposal to the Blackboard drop box early and request that the instructor review it using a Blackboard message.

In Class Progress Update

On March 26 come to class prepared to give a 2 minute summary of your progress to date.

Class Presentations

Give an 8 minute presentation about your project to the class, describing either your prototype (option 1), your data analysis findings and background research report (option 2), the outcomes of your research and a summary of the techniques in your domain (option 3), or your critique analysis (option 4). Your presentation should be well-prepared, organized, professional, and finish on time. Grades will be allocated to your handling of questions from the professor and class.

Final Report

Submit a final report on your project. All options should include a report. Lengths given below are a guideline and will not be strictly enforced. They correspond to documents set in 11 pt font with 1.15 line spacing and standard margins (like this document). The report will be different depending on your choice of project topic:

Option 1: Submit your source code and a report which describes your visualization software with screen shots demonstrating a walkthrough of how it is used. If your visualization is web-based, it would be best to also include a URL to a working version. Contact the professor if you require hosting space. Discuss any innovations and challenges in your handling of the data and in your software. (Report length approximately 3 pages including figures).

Option 2: Your report should include a description of the tools you used and why you chose them, the dataset you used and what the questions are about this data. You should discuss existing techniques for analyzing this sort of data. (Report length approximately 4 pages including figures).

Option 3: Your report should have an introduction, followed by a synthesis report on the various techniques in your domain of choice, organized into thematic groups in a manner which makes sense to you. Include subheadings to organize your work and figures where appropriate to illustrate the techniques you reviewed. (Report length approximately 5 pages including figures).

Option 4: Your report should describe the domain of choice, and discuss one or more visualizations in that domain from a critical information visualization point of view. Your opinions and analysis should be supported by specific evidence from the selected visualizations. You may include figures to illustrate your points. (Report length approximately 4 pages including figures).

Citations

Be sure to properly cite all referenced work using IEEE format. Please visit the library to talk to a reference librarian for help with this if needed.

Finding Resources

In addition to the resources discussed in class, and the visualization repositories found at Flowing Data and Infosthetics, you may find visualizations and research articles of interest by using Google Scholar. You could also look in the ACM Digital Library or the IEEE Xplore library. Both of these resources can be easily located through your favourite search engine and are freely available from on campus IP addresses. In the IEEE Xplore repository, you may want to focus on papers from the IEEE Information Visualization Conference and the journal Transactions on Visualization and Computer Graphics. In the ACM Digital Library you may want to focus on the Proceedings of the CHI conference (also called the SIGCHI Conference on Human Factors in Computing Systems), which is a broad conference on human-computer interaction which often contains papers about visualization.

For help finding resources you may contact the professor or visit the library to make an appointment with a reference librarian who can assist you with your search and teach you how to locate scholarly information.

Submission

Submit your report as a single **PDF file using Blackboard drop boxes as appropriate for each part.** Please include a cover page with your name and the academic integrity statement (see below). Also attach your Tableau workbook.

Name your file: Lastname-Firstname-HCI-<proposal/presentation/report>.pdf

Grading

Your assignment will be graded based on the quality and clarity of your insights, the correctness of your application of the model, and the thoughtfulness of your reflections on the analysis process. Grades may be deducted for assignments which are poorly written or confusing. Check your grammar and spelling.

Academic Integrity

This is an individual assignment. While you may discuss your progress with your classmates, each member of the class is expected to hand in their own work.

Please include this statement on the cover page of your report:

"I, <insert name>, certify that this work is my own, submitted for CSCI 4210U in compliance with the UOIT Academic Integrity Policy."

In this course, you MAY NOT review, copy or otherwise use any graded academic assignments from prior semesters or other sections of this course, in written, electronic, or verbal form, used in whole or part, including formatting of any assignment.