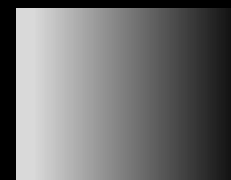# ASSIGNMENT 4

Interaction | dynamic visualization | facetted views

ASSIGNMENT 4.1 : DUE 06/04/2019 @ 23:59HRS

In this assignment your task will be to come up with a <u>novel</u> visualization; i.e. (a) either the data has not yet been visualized OR (b) data has not been visualized in the way that you visualize it.

1. **You may choose any dataset. Several options will be posted on the blackboard for convenience but you may choose your own.**

   No specific limits. There may be better opportunity to score highly with complex datasets but try to balance this with feasibility.

2. **You may choose any generalized* visualization <u>tool</u>.**

   * : Essentially you will score poorly if you were to use, say, a third-party solution where the choice of encoding have been specifically created for something closely matching your dataset and task (e.g. an MRI Visualization tool). Avoid this.

3. **Your visualization should fit into at least one of the following broad categories:**

   ¤ User centric: should include the Present category of task e.g. an infographic. Should engage the user, convey insight to the audience.

   ¤ Analyst centric: should include one of Discover, Derive or Search category of tasks e.g. a decision support tool, should seek to expose some non-trivial insight about the data (it may be the case that the visualization disproves a hypothesis)

4. **Your visualization must feature at least one of the following technical elements:**

   ¤ Multiple coordinated views (simultaneous views; may be static or dynamic)

   ¤ Animated view (some element of a changing view; may be linear i.e. without any input from user)

   ¤ Interactive manipulation of the view (some form of navigation by user)

DELIVERABLES

1. **Visualization artefact (i.e. presentation to the audience of the data):**

   1. This could be a link to your interactive visualization if online; a locally executable binary (you must provide instructions on how to run it); a video if the visualization is animated but non-interactive; or a high resolution image/PDF if it is static

   2. You should also submit a Zip file of the project source files that could be run by me.

   3. Link to the data (or attach the actual data if it is within 5Mb).

2. **Technical paper (detailing the design and implementation process).**

   1. This should be in the format of a 2-page abstract (a third page may be added purely including references).

   2. The paper should describe the data, task, and approach. Discuss the novelty of the visualization and reflect on the result highlighting and strengths and weaknesses (we will discuss analysis of visualizations in a later lecture).

   3. Specific template for paper will be provided on blackboard. You may simply replicate these as best as you can according to the sample PDF that describes the spec. (Main constraint is not to excessively shrink text to fit in more detail).

3. **A presentation video of exactly 2 minutes outlining the technical contributions of the paper (use captions or voice over).**

   - Please note that these will be compiled and may be made available for other students in the class (and future classes) to view anonymously in the last week. Do not include your name or title of the paper in the video. You may opt-out of distribution.

4. **A high resolution image (min 1024 x 1024 pixels) of the visualization to be used as a thumbnail overview**

NB. If your artefact is a video, you would be submitting two videos: one is the artefact, the other the presentation video (there is no limit on the length of the artefact video)

MARKING SCHEME

This project is worth 40% of the module. The percentages below represent how the project is further broken down out of 100.

40/100 for meeting the basic requirements : all deliverables submitted on time, artefact successfully visualizes the data, the process paper and video together clearly describes the data, task and idioms employed.

30/100 for quality of the artefact, including but not limited to: Novelty, Complexity, How well it achieves the task of visualizing the data using the idioms employed

30/100 Quality of process deliverables

- ¤ Paper is well written (clear and concise with minimal errors and suitable references); video is well put together and summarizes the paper and artefact
- ¤ Paper outlines the final artefact And explains/justifies the design choices made; outlines the novelty and complexity of the solutions; makes a good attempt at discussing strengths and weaknesses

Late Submissions will incur a 20% penalty for each day late upto a maximum of 3 days. After that all submissions are capped at 40% until April 19th, after which it will no longer be possible to submit anything.

ASSIGNMENT 4.2 DUE 12/04/2019

This minor assignment is worth 5% and is based on some minimal reporting on weekly studies in the final 5 weeks

- You will be provided links to some specialised visualizations introduced in class (including: spatial visualization, 3D visualization, network visualization)
- You will be asked to test them out briefly (run + manipulate + record some output)
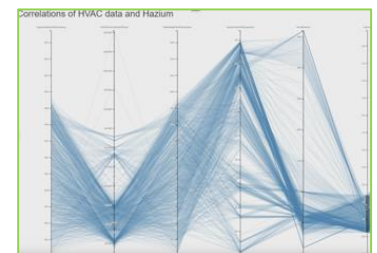- You will be asked to write a brief description of the encoding
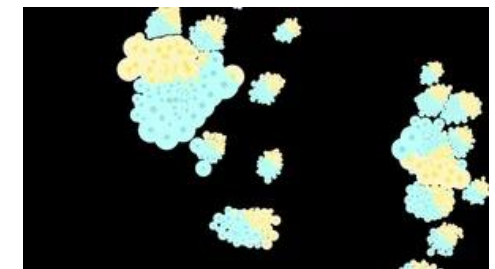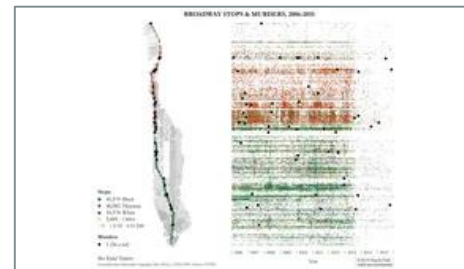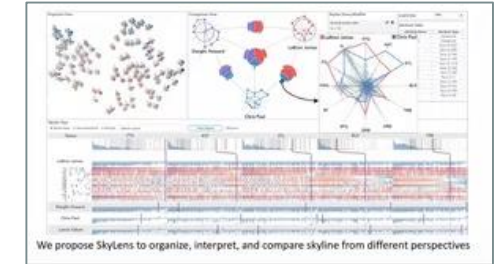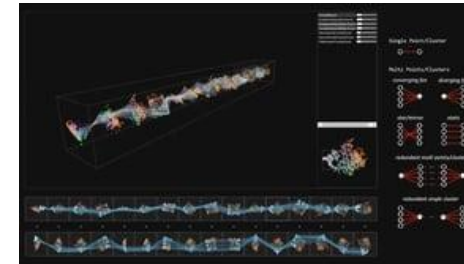
VIDEO EXAMPLES

Vis 2017 : 30 Second Videos [LINK]

- ✠ Shorter than required but shows how much detail can be expressed in a short video

- ✠ These are technical papers : you are not really expected to provide scientific novelty as they are

VAST Challenge Videos

- ✠ Closer to the brief of this project i.e. novel implementation of visualization of some data

- ✠ Mostly longer than 2 mins

- ✠ A lot detail of also the user process of analyzing the data (not really expected in this assignment)

Trinity College Dublin
Coláiste na Tríonóide, Baile Átha Cliath
The University of Dublin

TIPS ON CREATING THE VIDEO

You may just use captions / subtitles to describe the video [voice over not really expected]

Get a screen capture program. Free version with watermark is fine. E.g.

- https://www.techsmith.com/download/camtasia/ [mac/windows]
- https://www.bandicam.com/ [windows]
- http://www.fraps.com/download.php [windows]

There are loads of free video editing tools out there BUT just keep it functional. I'm not really expecting a really fancy video

- Windows Movie Maker as part of Windows Essentials Pack (really easy to use. Sadly now discontinued but you can still find downloads on the web and works in win 10) [windows]
- iMovie [mac]
- VirtualDub [windows]

Create a PowerPoint presentation + switch through slides automatically