**Course Assignments
for**

**Advanced Visual Data Analysis (TNM098)
Spring 2023**

Lab Assignment 2

The deadline for this assignment is April 16, 2023 (at 23:59).

Task 1 *Analysis of spatiotemporal data (eye-tracking data)*

The data file contains data from an eye-tracking session lasting just under 5 minutes. The raw data has been pre-processed to contain just fixations, not every eye sample.

There are 6 fields per sample:

1. A timestamp for the event.

2. A fixation index which is just an order in the file.

3. The event duration in milliseconds.

4. A gaze point index (which is pretty meaningless).

5. X coordinate of gaze point in pixels.

6. Y coordinate of gaze point in pixels.

The objective is to identify regions of interest to the user and observe how they change over time. Questions of interest might include:

- How many regions can be identified?

- How many are heavily used and when?

- Which regions are only used for part of the analysis procedure?

- What are the frequent transitions between the areas of interest?

- How do those transition patterns change over time?

You can use visual representations of the (accumulated) fixations or analytical methods such as clustering, or any combination which seems appropriate.

Prepare a short report describing your analysis approach and your proposed solution. Include a discussion of questions of interest and potential additional insights your solution makes possible. Upload your short report (~2 pages, PDF format) under submissions Lab 2 in Lisam by **Sunday 16 April, EOD**.

Prepare a short presentation (~10 minutes) for discussion during a scheduled lab seminar after the deadline. The presentation will take place during the lab session of **Monday 17 April, 13:15-17:00 in TP4003**.