TNM098
Advanced Visual Data Analysis

Project information

LINKÖPING UNIVERSITY

INFORMATION VISUALIZATION @ LiU

Project

- Course 6 hp → 4 weeks work → 160 hours
- 5hp (~130 hours), graded U,3,4,5

- Programming part, 50%
- Oral presentation, 25%
- Report writing, 25%

- Details on grading on course website – READ THEM!

Project

- Based VAST challenge
  - *"The VAST Challenge is designed to help researchers understand how their software would be used in a variety of analytic tasks and encourage innovation in data transformations and interactive visualizations."*
  - *"VAST Challenge problems provide researchers with realistic tasks and data sets for evaluating their software."*
- Clear problem
  - tasks in the form of questions to answer
  - an accompanying collection of datasets
- **GOAL:** A data-driven visual analysis process needs to be defined and implemented to solve the problem

Project data

- Large and diverse data sets
- Used in competition
- Best solutions win prizes at IEEE VIS conference
- This year's data is due any time now!
  - VAST challenges 2025:
    - Published late April (https://vast-challenge.github.io/2025)
  - VAST challenges 2019-2024:
    - https://vast-challenge.github.io/20XX
    - E.g. https://vast-challenge.github.io/2022
  - VAST challenges 2006-2018:
    - https://visualdata.wustl.edu/varepository/benchmarks.php

Project details

- 2 persons per project – register groups in lisam
- Select a challenge: focus on one (or more) mini challenges
- Planning report *per group* due **Wednesday 23/4**
  - Details and outline
- Supervision sessions for help & feedback:
  1. **Monday 5/5, 15-17**
  2. **Friday 16/5, 13-15**
- Demonstrations: **Wednesday 28/5, 8-12**
- Final report *per group* due **Monday 9/6**
- All submissions via lisam

Project details - Planning report

- Planning report per group due **Wednesday 23/4**
  - Who is in the group?
  - Which data?
  - Which questions will you focus on?
  - Preliminary overview of analysis approach you plan to take

Project details - Demonstrations

- Demonstrations (*per group*): **Wedneday 28/5, 8-12**
  - Prepare presentation outlining:
    - Data, goals, reasoning, pre-processing, design, implementation, walk-through of analysis
  - Presentation length: 20 minutes including Q/A (presentation **max 15 minutes**).
    - (May be adjusted depending on number of groups)
  - Upload slides to lisam at latest the day before, 27/5

Project details - Final report

- Final report *per group* due **Monday 9/6**
  - Graded
  - 3-4 pages
  - +1 page outlining individual contributions
  - Content suggestions:
    - Introduction (to task and data)
    - Goals & reasoning
    - Data preparation
    - Design & implementation of VA solution
    - Walk-through of analysis process with justification of choices
    - Discussion & Conclusions
  - Latex template for formatting will be made available in lisam

Overview of important dates

- Register project groups: **Wednesday 24/4**
- Planning report: **Wednesday 24/4**
- Supervision sessions:
  1. **Monday 5/5, 15-17**
  2. **Friday 16/5, 13-15**
- Demonstrations: **Wedneday 28/5, 8-12**
  - Submit slides day before: **27/5**
- Final report: **Monday 9/6**
- Course webpage:
  - additional information & **grading criteria**

What to use in the course?

- No prerequisites for labs and project
- Commonly used:
  - Javascript + d3.js
  - Python + dash/plotly/bokeh
  - R + ggplot/shiny
- List of viz tools & libraries on iVis group page
  - https://ivis.itn.liu.se/courses/resources/tools.html