

CS-E4840 Information Visualization exam 11.4.2019

The exam paper was not allowed to be taken so these questions are from my memory.
There might be some inaccuracies but should give you a good grasp of topics.

1. Explain terms

- a) Gibson's affordance theory
- b) CIEXYZ and CIELUV
- c) box plot
- d) Semiotics of graphics
- e) galmut
- f) Reference region

2. Acuities

- a) name and explain two acuities and super-acuities
- b) How humans react to Contrast sensitivity? How this relates to acuities in a). How it changes with age?
- c) If there is tv 57cm away how clearly you can see? What if it is 114cm away? What will change?

3. Gestalt laws

- a) What are gestalt laws and how used in information visualization.
- b) Name and briefly explain at least 6 laws.

4. Dimension reduction.

- a) PCA. How pca operates and what would it produce 1d picture from figure 1.
- b) How ISOMAP operates and how it would produce 1d picture from figure 1. How ISOMAP differs from PCA?
- c) Explain Stress, Precision and Recall. Which is better for a) and b)?

5. Essay

- a) History of data graphics
- b) Color in information visualization. Guidelines and rules.

Example of Figure 1. The letters are simply data points meant to help with demonstration of the 1d transformation.

