



VIS: OPTICS_{vis}

Milestone 2

Group 11

22. November 2017

Fakultät für Informatik

Agenda

1. Project

Definition

Data

Possible Visualizations

2. Mockups

Mockup 1

Mockup 2

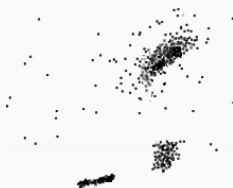
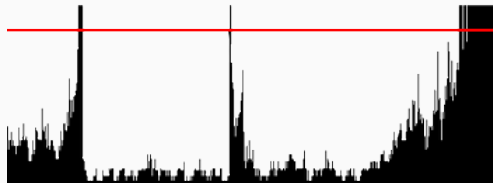
Mockup 3

3. Future Work

Project

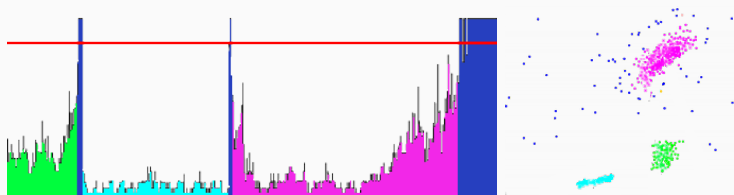
Project definition

- OPTICS: density based clustering
 - algorithm jumps between points in some order
 - records jump distances
- output somewhat hard to read
 - point order
 - a list of numbers
- staple visualization method: the bar chart



Project definition

- colorizing helps a lot
- but how does it *work*?
- how do these numbers relate to the data?
→ OPTICS_{vis}



- threefold:
 1. points: real-valued and two dimensional (user input)
 2. algorithm output: point ordering and reachability distances
 3. metadata: to be collected as the algorithm runs
- visualize both the data set and the results
- give a rough overview of the steps the algorithm did

Visualization possibilities (a selection)

Density map

OPTICS is density-based, maybe the visualization should be too. Avoids clutter when many points present.

Reachability distances

OPTICS and bar chart belong together.

Heat map

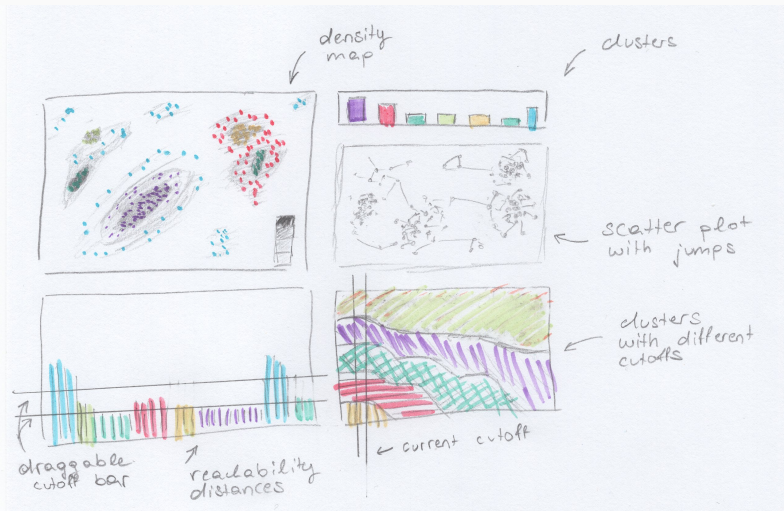
Similarities of points mapped to both axes reveal hierarchical structures.

Dendogram

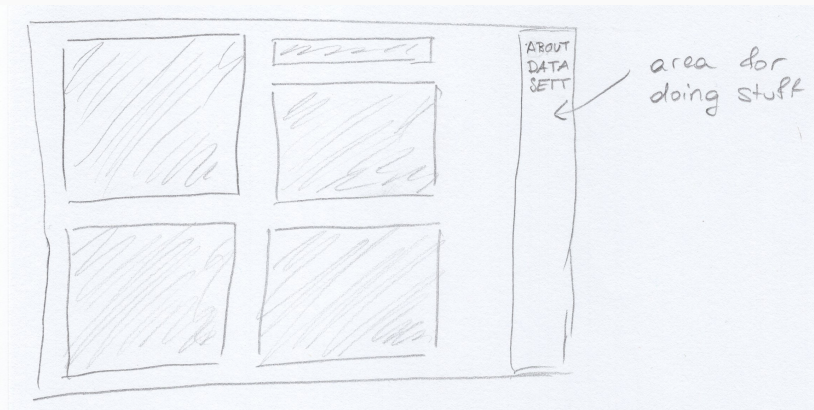
Dendograms (or tree maps) can be used to visualize cluster hierarchies, but corresponding cutoffs need to be picked—but how?

Mockups

Mockup 3



Mockup 3



Mockup 3: Analysis

- + density map is an apt way to display data for density clustering
- + scatter plot with jump paths shows how the algorithm works
- + area chart contrasts different cutoffs against each other, can help pick the best cutoff
- area chart is non-interactive
- area chart is probably close to useless on most data sets

Future Work
