universität wien

VIS: OPTICS$_{vis}$
Milestone 3

Group 11

12. Dezember 2017

Fakultät für Informatik

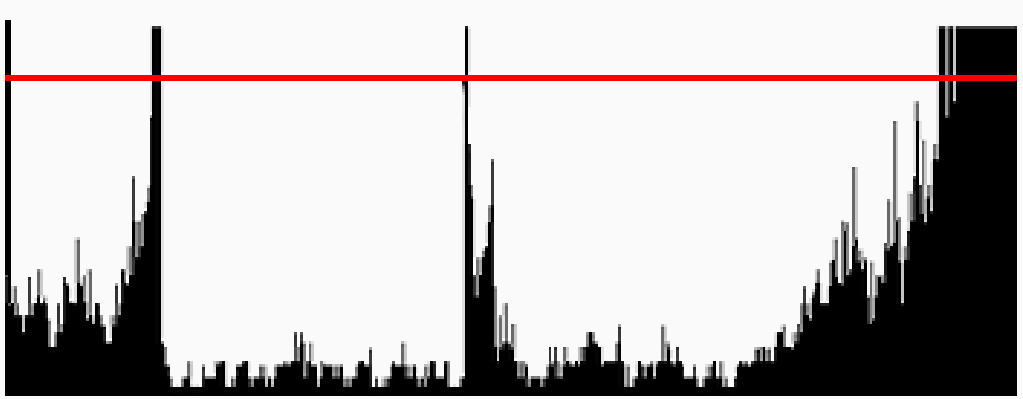
Agenda

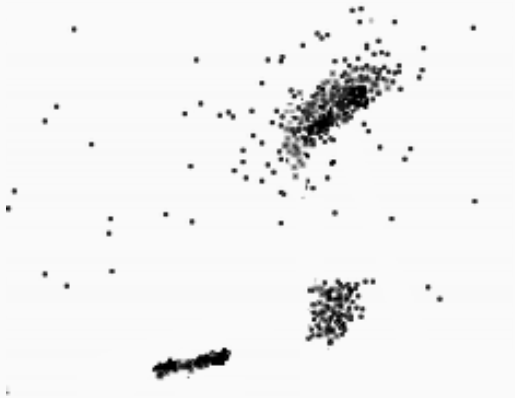
1. Project
   - Definition
   - Data
2. Users and Tasks
3. Demo
4. Visualization techniques
5. Challenges and Problems

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

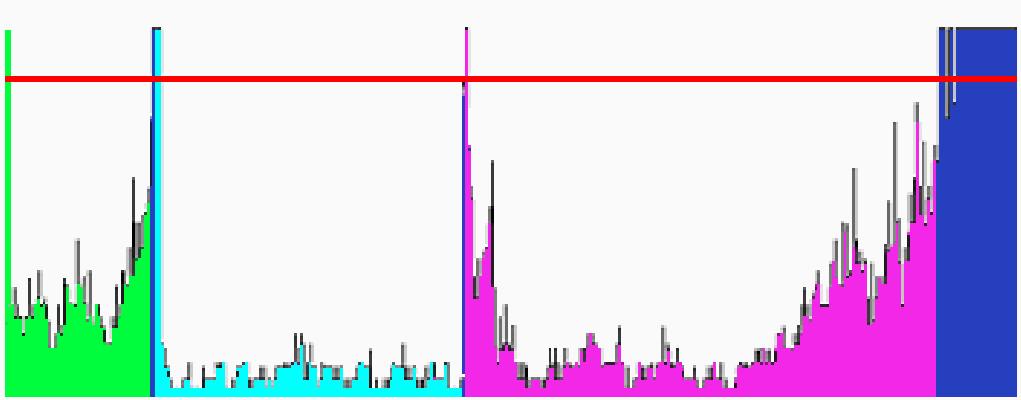


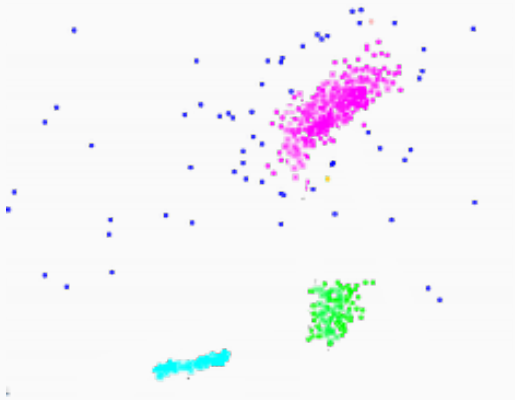


Project definition

- colorizing helps a lot
- but how does it *work*?
- how do these numbers relate to the data?

  $\rightarrow$ $\text{OPTICS}_{\text{vis}}$





Our data

- 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

Users and Tasks

Users

- Teachers
  - for educational purposes
- Researchers
  - exploration
  - testing before practical usage
- Anyone
  - exploration

Tasks

- Exploration
  - get a feeling for the algorithm, get to know it
- Education
  - learn about the algorithm and how to interpret the output
- Testing
  - give an idea if the algorithm fits the users problem
  - see if result/output is satisfactory and useful

Demo

Visualization techniques

Visualization techniques

- filtering
- linking & brushing
- tooltips
- zooming
- heat map
- scented widget
- aggregation

Challenges and Problems

Challenges and Problems

- slow implementation
- some aspects of the visualization rely on running the algorithm repeatedly, locks up the interface
- would benefit from backend

Thank you for your attention!