Multi-Level Visualization of Interrelated Data Entities



Sandra Gama, Daniel Gonçalves

http://danielgoncalves.info/research/educare

Context

Nowadays we generate information in a variety of contexts using multiple devices.

Result: large amounts of complex data.

Problem: finding a way to interrelate and analyze information.

Visualization may be the solution!

Approach: Multi-Layered Interactive Visualization

Challenge: representing data entities and dependencies while avoiding visual clutter. **Solution**: using vertical layers to represent sequentiality and visually interconnecting data entities using interactive mechanisms.

Patterns

iar >> Total: 1512 students

20% 25% 50%

fex ami al iprog sdg tcomp aled fisical am2 argc poo sibd ascomp soper fisica2 anum compg comp iar am3 pif pest scil ihm adesen micro ticl tic2 eprog aavan room sod tpl tp2 sci2

tcomp aled fisical am2 argc soper pif fisica2 anum amd in scil poo sibd ascomp pest compg tic2

6 detailed patterns for iar

poo,iar,982
sibd,iar,787
poo.sibd,iar,680
poo,iar,compg,688
sibd,iar,compg,685
poo,sibd,iar compg,685
poo,sibd,iar,compg,685

Levels: time frames.

Data entities: circles (size proportional to a given feature).

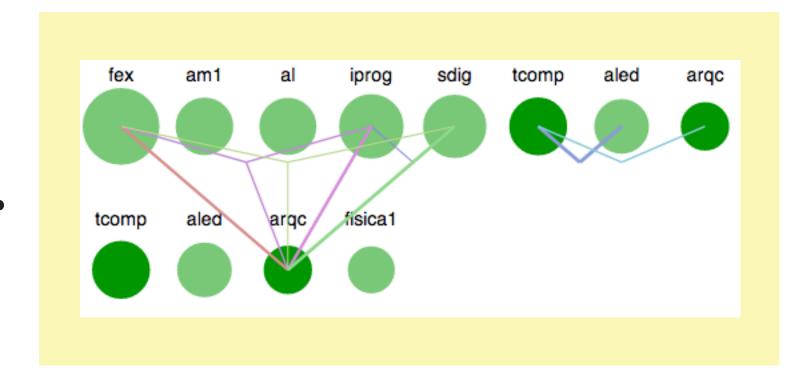
Dependencies: visual connectors.

Detailed information: right-hand side panel (list of dependencies).

Interaction

Mouse over entity shows all its dependencies.

Seleting a dependency on the panel shows the visual connector. Entity lock for simultaneously comparing two entities.



User-reported results

General informatiton immediately perceivable.

Simple and natural exploration and comparison between entities.





