Building parallel coordinates

Lucas Rizoli
CPSC 533C, December 2006
Parallel Coordinates: Good

Multivariate data
Conceptually simple
Apply Generally
Cheap to render
Parallel Coordinates: Bad

Visual clutter
Not high dimensionality
Pairwise comparison
Order of axes
Order of axes

Dimensional reduction
Computer–controlled ordering
Manual axis shuffling
Shuffling

Scales poorly
Mentally, physically expensive
Requires knowledge of data
Labour and luck
Wanted ordering method

Simple
Inexpensive
User control
Exploratory
Advantages

Piece-by-piece exploration
Look ahead
Simplify the plot
Immediate advantages

Efficiency
Space
Lower mental load
Comparison
Development

Simple when simple

Formal and informal

Reinventing wheel
Comparing methods

Shuffling vs. Fan-menus

Time, error rates

Conclude one is better
Evaluating the method

Exercises with real data
Ability, satisfaction
Evaluating the method

Data-dependent
Artificial tasks
Method or lack of understanding?
Future work

Filter and sort
Sort by cluster, trend
Include metadata
Drawbacks

Comparison
Mouse efficiency
Mental, physical cost
Less exploratory
Parallel coords are useful
Room for improvement
Useable and informative
User constructed plots

Showing
Exploring
Understanding