Viewpoints

A high-performance high-dimensional exploratory data analysis tool
(workstation version of the hyperwall)

http://astrophysics.arc.nasa.gov/viewpoints
viewpoints

• “hyperwall for the masses”
• Workstation/laptop application
• Multiple views:
  - high dimensional data
  - linked scatterplots + brushing
  - dynamic histograms
• Normalizations, outlier detection/removal
• High performance on large datasets
applications

- quantum chemistry
- CFD
- virology
- machine learning
- finance
- astrophysics
dependencies

• gsl = gnu sci lib (normalization calculations)
• blitz++ = array handler/memory management
• fltk = wrapper for opengl (cross-platform!)
• flews = widgets for fltk
• gmm++ = blas, lapack, sparsepack,…

Makes use of fast graphics abilities on card (opengl 1.6) instead of using system CPU.
availability

- linux
- Apple OSX
- MS windows

- NASA Open Source (GPL) approved:
  http://www.assembla.com/wiki/show/viewpoints/download
enhancements

• User interface
• Machine learning
  - dimensionality reduction (ICA…)
  - clustering
  - entropy, mutual information …
• More views (spectra, n-dimensions, tours)
• Performance (threads, shaders…)

DEMO