InfoVis Group Research

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HCI@UBC 2013 Kickoff
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http://www.cs.ubc.ca/~tmm/talks.html#hci13

People

- on sabbatical, small group!

- Matt Brehmer
  – continues PhD
- Jessica Dawson
  – defends MSc end of Oct
- Stephen Ingram
  – defends PhD Friday
  – then postdoc

Many Flavors of Work

- Problem-driven work
  – design studies
- Technique-driven work
  – algorithms, systems
- Evaluation
  – lab/field/data studies
- Theoretical foundations
  – models

Design Studies: Biology Domain

- Variant View: gene sequence variants

- MulteeSum, Pathline: comparative functional genomics

- MizBee: comparative genomics (synteny)

- Cerebral: gene expression + interaction network

Design Studies: Other Domains

- RelEx: automative networks

- Vismon: fisheries simulation/mgmt

- LiveRAC: large-scale system monitoring

- SessionViewer: web logs

Techniques: Dimensionality Reduction
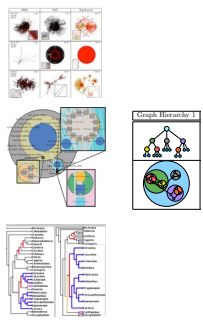
- Glint: costly distance functions

- DimStiller: visual dimensional analysis and reduction toolkit

- Glimmer: GPU accelerated MDS

Techniques: Graphs/Trees
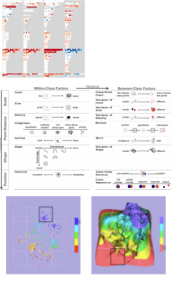
- general multilevel/compound graphs
  – layout
    - TopoLayout
  – interaction
    - Grouse
    - GrouseFlocks
    - TugGraph

- evolutionary tree comparison
  – TreeJuxtaposer

Evaluation: Dimensionality Reduction
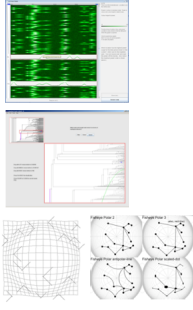
- guidance on scatterplot/DR choices

- taxonomy of cluster separation factors

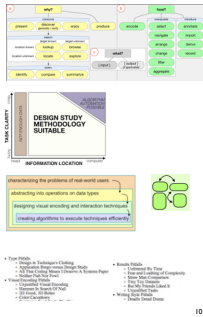- 2D points vs 3D landscapes

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Evaluation: Focus+Context

- overviews: separate vs. integrated views

- navigation: stretch and squish vs. pan/zoom navigation

- impact of distortion on visual search, visual memory

Theory/Models

- multi-level typology of abstract visualization tasks

- design study methodology

- nested model for vis design and validation
  – revisited: blocks and guidelines

- papers process and pitfalls