InfoVis Group Research

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CPSC 344 Outro
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http://www.cs.ubc.ca/~tmm/talks.html#344-outro19

Teachnique-driven work
• scalable algorithms & systems
  – typical evaluation: computational benchmarks
• new layout & interaction techniques
  – typical evaluation: controlled experiments on human subjects

Problem-driven work
• design studies
  – in collaboration with target users
  – real data, real tasks
  – intensive requirements analysis
  – iterative refinement
  – deploy toolkits
  – typical evaluation: field studies
• my strategy: opportunistic collaboration
  – many domains
  – both industrial and academic partners

Evaluation: broadly interpreted
• methods from many fields, qualitative & quantitative
  – controlled experiments in lab, field studies of deployed systems
  – ethnography
  – anthropology
  – design
  – computer science
  – HCI

Problem-driven: Energy, sustainability
• Matt Brehmer
• Kerri Yune (Paleo/ExasNOC)

Problem-driven: Genomics
• Aaron Borko
• Jean Gundy (UBC Micro)
• Robert Kiewald (Agilent)

Technique-driven: Graph drawing
• Dariel Aronhjem
• David Auber (Bordeaux)

Technique-driven work
• scalable algorithms & systems
  – typical evaluation: computational benchmarks
• new layout & interaction techniques
  – typical evaluation: controlled experiments on human subjects

Why is validation difficult?
• different ways to get it wrong at each level

Domain situation
You misunderstood their needs
You're showing them the wrong thing
Visual encoding/interaction idiom
The way you show it doesn't work
Algorithm
Your code is too slow
Data/task abstraction
You misunderstood their needs

Evaluation experiments: Graph drawing
• Dmitry Makushevski
• Adam Bodnar
• Joanna McGregor

Glimmer
http://www.cs.ubc.ca/~bodnar/Glimmer

Session/Time: web log analysis
https://youtu.be/8z7ZlgGkGcI

Dmitry Nekrasovski
Jessica Dawson
Search set model of path tracing

Problem-driven: Genomics, journalism
• Joel Preece
• Cydney Nielson (RCA Coeur)

Variant View
https://youtu.be/1s56oDKv3l4

Technique: Dimensionality reduction
• Digital Impact
• Glimmer
• Dimิน

Problem-driven: Autos, e-commerce
• Michael Sedlmair
• Raile (SERI)
• https://youtu.be/51hQlObl9Rk

Session/Time: HVE2014
https://youtu.be/ONB6X8kMNg

Problem-driven: Tech industry
• Hamid Len
• Diane Tang (Google)

Session/Time: web log analysis
https://youtu.be/8z7ZlgGkGcI

Dmitry Nekrasovski
Adam Bodnar
Joanna McGrenere
Jessica Dawson
Search set model of path tracing
Theoretical foundations

- [www.cs.ubc.ca/~tmm/talks.html#344-outro19](http://www.cs.ubc.ca/~tmm/talks.html#344-outro19)

Grad course: CPSC 547

- teaching now
- final presentations Tue Dec 10
  - 3-7pm FSC 2330A

Ugrad course: CSPC 436V

- brand new, pilot is Jan 2020
  - [https://www.cs.ubc.ca/~tmm/courses/436V-20/](https://www.cs.ubc.ca/~tmm/courses/436V-20/)
- 4th year majors course
  - theory: visualization foundations
  - tooling: D3.js