

Course Pitch: Information Visualization Sep 2017

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CPSC 547, Information Visualization

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<http://www.cs.ubc.ca/~tmm/courses/547-17F>

Why visualization?

- why might you want to design/build interactive visualization systems?
 - if you've got data to analyze or present: now, or someday
 - interactive visual data analysis can speed up human-in-the-loop data analysis process
 - scaffold human decision-making when fully automatic computation impossible/untrusted
- systematic discussion of design space
 - beyond simple static charts
- draws on / plays well with
 - HCI, cognitive psychology, graphics
 - algorithms, data structures, graph theory
 - stats, machine learning

What you'll do

- before class
 - readings (book chapters, research papers)
 - submit written questions/comments for each, respond to a few peer questions
- during class
 - in-class group exercises, discussion, some lecture
 - project pitches, critiques, peer review, presentations
 - 3 hour block, once/week (Tue 2-5pm)
 - off by one: starts next week Sep 12, ends one week late (Dec 5)
 - final presentations (Tue Dec 19 afternoon, whole dept invited)
- outside class
 - bulk of project work
- no problem sets or exams

Projects

- project
 - teams of 2-3
 - can be tied to other courses or thesis work
 - types
 - programming: design study (data-driven)
 - programming: technique (algorithm-driven)
 - analysis (compare & contrast capabilities of existing tools)
 - survey (lit review)
 - interactive explorable explanations (in spirit of distill.pub)
 - milestones
 - meetings, critiques, peer reviews
 - written proposals, written final report
 - pitches, final presentations

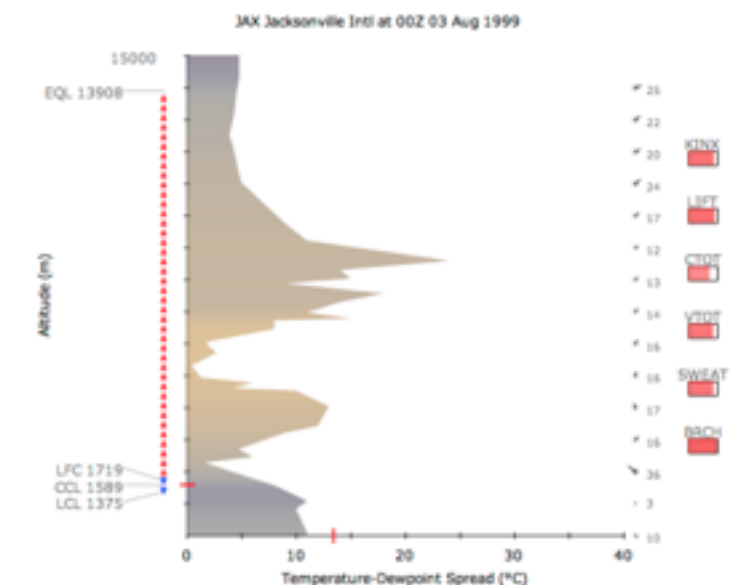
Past projects: Data-driven thesis

- haptics (2014)
 - VibVis from Kailun Zhang & Hasti Seifi (WHCI5 paper)
- networking
 - NTP, VOIP, P2P
- bioinformatics
 - gene sequences, flow cytometry, electrophysiology
- graphics/vision
 - mocap, deep learning
- software engr
 - program structure navigation, source code history
- many others
 - eye tracking (2015)
 - SEQIT from Mike Wu (InfoVis15 poster)



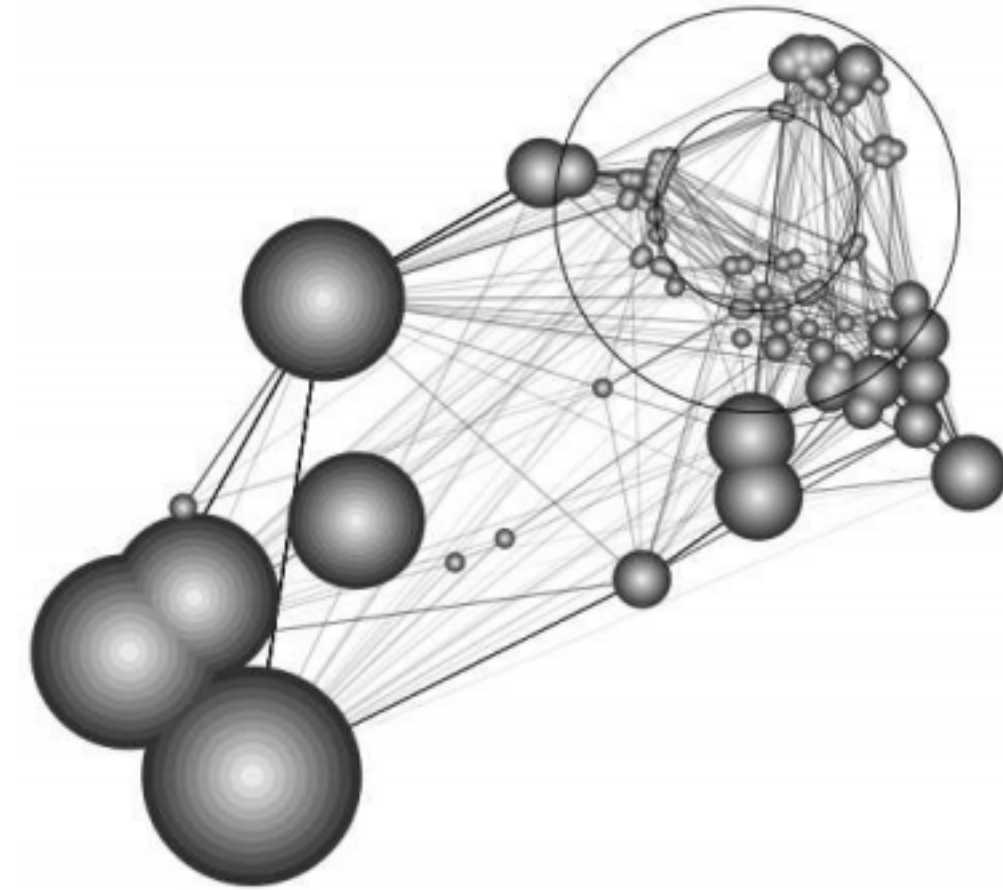
Past projects: Data-driven personal

- basketball stats (2014)
 - Peter Beshai (sports analytics job w/ Boston Celtics)
- lemur survival (2011)
 - Anna Flagg (data journalism jobs at ProPublica and Al Jazeera)
- atmospheric sounding (2006)
 - Sancho McCann: pilot and flight instructor
- many others
 - restaurants, organic farming, music collections



More past projects

- technique-driven projects
 - network drawing
 - dimensionality reduction
 - deep learning
- literature surveys
 - ontologies, timelines, data mining
- analysis projects
 - construction change orders in civil engineering



What do you need? What do you get?

- no mandatory prereqs
 - HCI & graphics useful but not required
 - programming experience not required
 - grads from other depts welcome, can do analysis/survey projects
- twofold goal
 - specific: teach you some infovis
 - coursework, project meetings
 - generic: teach you how to be a better researcher
 - experience reading papers
 - feedback on writing and presenting
 - both content and style
 - both intermediate work and final product
- basic web page now, see link to last year's version

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