Welcome!

Fundamental material
• first part: read & participate [50%]
– before class: async discussion [36%]
• you do readings (3/week, mix of chapters & papers)
  – round 1 due 1pm Mon (2 days before class), 75% of comment mark
  – round 2 due 1pm Wed (2 hrs before class), 25% of comment mark
  – round 3 due 1pm Fri (after class)
  – round 4 due 1pm Fri (2 days before class), 25% of comment mark
• papers
  – link provided per session
  – feedback on class platform
• email is the best way to reach me: tmm@cs.ubc.ca
  – but unlikely to catch me by dropping by, usually either in meeting or elsewhere
• TA: Mara Solen (they) 

Course Logistics

Enrollment
• don’t worry if you’re not registered yet, just attend and keep up
  – major churn is normal the first few weeks
  – spaces will definitely open up
• do make sure you’ve signed up on spreadsheet!

Delivery mechanisms
• Live: small-group work, discussion / Q&A, lecture
• Web:
  – course web, syllabus & all instructional materials, slides, videos, project deliverables
  – office hours Wed right after class (6:15-7:15pm)

Content submission & marking
• written comments on reading in advance, in two rounds
  – start as pass/fail marking, see how it goes
  – switch to explicit marking if quality concerns
• TA: Mara Solen (they)

Fundamental material
• first part: read & participate [50%]
  – before class async discussion [36%]
  – after class: in-class work/exercises/critique
• you do readings (3/week, mix of chapters & papers)
  – round 1 due 1pm Mon (2 days before class), 75% of comment mark
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  – round 5 due 1pm Fri (3 days before class), 25% of comment mark
  – round 6 due 1pm Fri (4 days before class), 25% of comment mark
  – round 7 due 1pm Fri (5 days before class), 25% of comment mark
• papers
  – feedback on class platform
  – classroom discussion
  – email is the best way to reach me: tmm@cs.ubc.ca

Course Logistics

Audience
• no formal prerequisites
  – many areas helpful but not required
  – human-computer interaction (HCI), eg CPSC 544 this term or equivalent
  – computer graphics, cognitive psychology, machine learning, statistics, algorithms, application domains
  – programming skills required for most project types
• open to non-CS people
  – if no programming background, can do analysis or survey project

Schedule, big picture
• once/week, 3-6pm Wednesdays, 12 sessions
  – with short break roughly halfway through
  – Sep 7, first class today!
  – Sep 19, annual IEEE VIS conference
  – Nov 9, midterm break
• Dec 14, final presentions: afternoon, exact time TBD (2-6pm?)
• Dec 16, final reports due (8pm)

Comments content
• comments or questions
• fine to be less formal than written report
• examples on http://www.cs.ubc.ca/~tmm/courses/547-22/structure.html

Comments submission & marking
• written comments on reading in advance, in two rounds
  – start as pass/fail marking, see how it goes
  – switch to explicit marking if quality concerns
• TA: Mara Solen (they)

Course Logistics

Finding info; finding me
• course page is font of all information
  – don’t forget to refresh, frequent updates
  – if no programming background, can do analysis or survey project

Delivery mechanisms
• Live: small-group work, discussion / Q&A, lecture
• Web:
  – office hours Wed right after class (6:15-7:15pm)
  – or by appointment (in-person or zoom), send email to schedule
  – if email is the best way to reach me: tmm@cs.ubc.ca

Enrollment
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Course Logistics
**Pandemic mode**
- masks strongly recommended indoor public spaces
- if you eat or drink, remask between bites and sips

**Projects [50%]**
- groups of 2, 3, or 4
  - amount of work commensurate with group size
- permission for solo project granted in exceptional circumstances, by petition

**Case 1: Cluster-Calendar Solution**
- derived data: cluster hierarchy
- juxtapose multiple views: calendar, superimposed 2D curves

**Projects**
- programming
- common case (I will only consider supervising students who do these)
- four types
  - problem-driven design studies (target specific usecases)
  - technique-driven (explore design choice space for encoding or interaction idiom)
  - algorithm implementation (as described in previous paper)
  - interactive explainer (like flood warnings)

**Visualization**

**Visualization (vis) defined & motivated**
- Computer-based visualization systems provide visual representations of datasets designed to help people carry out tasks more effectively.
- Visualization is suitable when there is a need to augment human capabilities rather than replace people with computational decision-making methods.
- human in the loop needs the details
  - doesn't know exactly what questions to ask in advance
  - long-term exploratory analysis
  - speed up through human-in-the-loop visual data analysis
  - presentation of known results
  - stepping stone towards automation, refining, troubleshooting
  - intended task, measurable definitions of effectiveness

**Exercise: Time Series**

**Break**
- move into small breakout groups by end of break

**Visualization**

**Now: In-class design exercise, in small groups**
- Three time-series scenarios
  - 1: every 5 min, duration 1 year, 1 thing: building occupancy rates
  - 2: several years and several things: every 5 min, 5 years, 10 currencies
  - 3: several parameters, many things: every 5 min, 1 year, 10 params on 100 machines
- Small-group exercise: 60+ min
- breakout groups: 4 (people/group)
- brainstorm possible visual encodings & interactions for each scenario
- document in group's googledoc w/ text & sketch images
- reportback: I'll flip through googledocs, some questions for group spokesperson
- Design space examples/discussion: 15-20 min

**Case 1: 3D Approach (Not Recommended)**
- extruded curves: detailed comparisons impossible

**Case 1.5: Ocupado**
- [Cluster and Calendar based Visualization of Time Series Data. van Wijk and van Selow, Proc. InfoVis, 99.]
- Visualizations suitable when there is a need to augment human capabilities rather than replace people with computational decision-making methods.
- human in the loop needs the details
  - doesn't know exactly what questions to ask in advance
  - long-term exploratory analysis
  - speed up through human-in-the-loop visual data analysis
  - presentation of known results
  - stepping stone towards automation, refining, troubleshooting
  - intended task, measurable definitions of effectiveness
Case 2: ChronoLenses


https://youtu.be/k7pI8ikczqk

Other Case (compare 2): Stack Zooming


https://youtu.be/dK0De4XPm5Y

Case 3: LiveRAC