Overview

- What Not To Do (General Research)
- What To Do (General Research)
- What To Do (For This Class)
Paper Pitfalls: Strategy

- What I Did Over My Summer Vacation
  - Focus on effort not contribution
  - Too low-level
- Least Publishable Unit
  - Tiny increment beyond (your) previous work
  - Bonus points: new name for old technique
- Dense As Plutonium
  - So much content that no room to explain why/what/how
  - Fails reproducability test
- Bad Slice and Dice
  - Two papers split up wrong
  - Neither is standalone, yet both repeat
- Slimy Simultaneous Submission
  - Often detected when same reviewer for both
  - Instant dual rejection, multi-conference blacklist
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Paper Pitfalls: Tactics

- Guess My Contributions Game
  it's your job to tell reader explicitly
  consider carefully, often different from original goals
- I Am So Unique
  don't ignore previous work
  both on similar problems and with similar solutions
- Enumeration Without Justification
  "X did Y" not enough
  must say why previous work doesn't solve your problem!
  what limitations of theirs does your approach fix?
- Deadly Detail Dump
  how allowed only
  what and why
  motivation: why should I care
  overview: what did you do
  details: how did you do it
- Jargon Attack
  avoid where you can
  define before using
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Talk Pitfalls

- Results As Dessert
  - don't save til end as reward for the stalwart
  - showcase early to motivate

- A Thousand Words, No Pictures
  - aggressively replace words with illustrations
  - most slides should have a picture

- Full Coverage Or Bust
  - cannot fit all details from paper
  - talk as advertising, communicate big picture
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Review Reading Pitfalls

Reviewers Were Idiots
- rare: insufficient background to judge worth
- if reviewer didn't get point, many readers won't
- rewrite so clearly that nobody can misunderstand

Reviewers Were Threatened By My Brilliance
- seldom: unduly harsh since intimately familiar area

I Just Know Person X Wrote This Review
- sometimes true, sometimes false
- don't get fixated, try not to take it personally

Ignore Review and Resubmit Unchanged
- often will get same reviewer, who will be irritated

It's The Writing Not The Work
- sometimes true: bad writing can doom good work
- converse: good writing may save borderline work
- sometimes false: weak work all too common
- many people reinvent wheel
- some people make worse wheels than previous ones
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Paper Structure: General

- low level: necessary but not sufficient
  - correct grammar/spelling
  - sentence flow
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- high through low level: why/what before how
  - paper level
  - section level
  - sometimes even subsection or paragraph
Paper Writing: InfoVis Technique/Design Study

- what problem are you solving
- why should I care
  - order depends on whether familiar
- why don’t existing systems solve problem
- technique
  - how algorithm works: overview, then details
- design study
  - what is mapping from domain problem to visual encoding
  - why does it solve problem
    - abstraction and justification is critical
  - may include multiple design iterations
- results
  - complexity, performance, visual quality, efficacy
  - usage scenarios, case studies
InfoVis Paper Styles

▶ technique
  ▶ most common
  ▶ here’s how to do X
  ▶ do first, or do better
▶ design study
  ▶ not just apply technique X to domain Y
  ▶ justify visual encoding choices
▶ system
  ▶ very hard to do well!
  ▶ lessons learned: why do we care?
▶ evaluation
  ▶ often but not always user studies
▶ model
  ▶ frameworks, taxonomies
  ▶ best case: taxonomy as aid to thinking, finding gaps

▶ actual paper may (should?!) have a mix of these elements
▶ more at www.infovis.org/infovis/2003/CFP/#papers
Paper Writing: Contributions

- what are your research contributions?
  - what can we do that wasn’t possible before?
  - how can we do something better than before?
  - what do we know that was unknown or unclear before?

- determines everything
  - from high-level message to which details

- often not obvious
  - diverged from original goals, in retrospect

- state them explicitly and clearly in introduction
  - don’t hope that reviewer or reader will fill in for you
  - don’t leave unsaid what should be obvious after close reading of previous work
    - pw very important - but many readers skip
  - goal is clarity, not overselling
    - do include limitations: often later, in discussion subsection
Two Nonstandard Suggestions

- Write and give talk first
- Then create paper outline from talk
- Encourages concise explanations of critical ideas
- Avoids wordsmithing ratholes and digressions
- Practice talk feedback session: at least 3x talk length
- Global comments, then slide by slide detailed discussion
- Nurture culture of internal critique
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Project Writeups

- www.cs.ubc.ca/~tmm/courses/533/projectdesc.html#final
- do read closely!

- due the day after presentations (Fri 12/15 2pm)
- submit PDF
  - templates provided (LaTeX, Word)
Course Requirements vs. Standard Paper: 1

- research novelty not required
  - some past projects implement published technique
  - some past projects explicitly not aiming for academic publishability
- many past projects propose solution using existing techniques
- some past projects have become posters at InfoVis
- some past projects could have been submitted as papers with further work
Course Requirements vs. Standard Paper: 2

▶ explicit explanation of what was coded is required for programming projects
  ▶ submission of code itself not required
  ▶ (but you’re encouraged to make it available open-source!)
▶ part of my judgement is about how much work you did
  ▶ high level: what toolkits etc did you use
  ▶ medium level: what pre-existing features in them did you use
  ▶ medium level: how did you adapt/extend existing features to solve your specific problems

▶ design justification is required for programming projects
  ▶ technique alone is not enough

▶ evaluation encouraged but not required
  ▶ tradeoff: hard to do both evaluation and technique
Final Presentations

- 20 minutes each
  - some context setting
  - focus on results

- demos encouraged
  - do include screenshots in slides as backup
  - practice in advance since hard to do quickly
  - if you’re using my laptop, must checkout in advance