

Lecture 15: Research Process

Information Visualization
CPSC 533C, Fall 2007

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Overview

- ▶ Research Process and Pitfalls
- ▶ Course-Specific Issues

Talk Pitfalls

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 - ▶ don't save til end as reward for the stalwart
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- ▶ A Thousand Words, No Pictures
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 - ▶ 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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- ▶ 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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- ▶ **You Didn't Channel Me**
 - ▶ don't compare against the paper you would have written
 - ▶ review the paper they submitted

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 - ▶ global comments, then slide by slide detailed discussion
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 - ▶ nurture culture of internal critique
- ▶ have nonauthors read paper before submitting
 - ▶ internal review can catch many problems
 - ▶ ideally group feedback session as above

Paper Structure: General

- ▶ low level: necessary but not sufficient
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- ▶ high through low level:
why/what before how
 - ▶ paper level
 - ▶ motivation: why should I care
 - ▶ overview: what did you do
 - ▶ details: how did you do it (algorithms)
 - ▶ section level
 - ▶ sometimes even subsection or paragraph

Overview

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Final Presentations

- ▶ 20 minutes each, + 5 minutes for questions
 - ▶ some context setting, but focus on results
 - ▶ ok to assume audience already saw update
- ▶ demos encouraged
 - ▶ do include screenshots in slides as backup
 - ▶ practice timing in advance since hard to do quickly
 - ▶ if you're using my laptop, must checkout in advance
- ▶ department will be invited
- ▶ refreshments will be served

Final Project Writeups

- ▶ no length restrictions
 - ▶ use images liberally
- ▶ conference paper format
 - ▶ use templates provided (LaTeX, Word)
 - ▶ submit PDF
- ▶ due two days after presentations (Fri 12/14 2pm)
- ▶ standalone document
- ▶ www.cs.ubc.ca/~tmm/courses/533/projectdesc.html#final
 - ▶ do read closely!

Final Project Writeups

- ▶ Introduction - description of problem: task, data
- ▶ Related work
- ▶ Description of solution: infovis techniques, visual encoding
- ▶ Medium-level implementation
 - ▶ must include specifics of what other components/libraries you built upon, vs. what you did yourself
- ▶ Results
- ▶ Screenshots of your software in action
- ▶ Scenarios of use
- ▶ Discussion and Future Work
 - ▶ strengths and weaknesses
 - ▶ lessons learned
 - ▶ what would you do if you had more time?
- ▶ Bibliography

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 (design study)
 - ▶ some past projects extend/refine algorithms (technique)
 - ▶ 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 (unless analysis project)
 - ▶ technique explanation alone is not enough
- ▶ evaluation encouraged but not required
 - ▶ tradeoff: hard to do both evaluation and design/create
- ▶ confirm that your color choices appropriate
 - ▶ vischeck.com for colorblind
 - ▶ legibility, color guidelines

Custom Evaluations