Writing Bad Papers
Writing Good Papers

VIEW Workshop

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Overview

- What Not To Do
- What To Do

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 reproducibility 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

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 **after** 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

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

Overview

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- What To Do

Paper Structure: General

- low level: necessary but not sufficient
  - correct grammar/spelling
  - sentence flow
- medium level: order of explanations
  - build up ideas
- high through low level:
  why/what before how
  - paper level
  - section level
  - sometimes even subsection or paragraph

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

Three 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
- have nonauthors read paper before submitting
  - internal review can catch many problems
  - ideally group feedback session as above

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: 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
  - informal usability, formal user study, field study
  - anecdotes (insights found), user community (adoption),
  - usage scenarios, case studies