Sample outlines: Design study

• abstract
  – concise summary of your project
  – don't include citations
  – introduction
    – give big picture, establish scope, some background material might be appropriate
    – related work
      – include how work arrived at similar problems and similar solutions
      – no requirement for research novelty, but still frame how your work relates to it
    – cover both academic and relevant non-academic work
      – you might want to have this section later

• results
  – include scenarios of use illustrated with multiple screenshots of your software
  – motivate through how your interface succeeds (or fails) at solving intended problem
  – report on evaluation you did (eg deployment to target users, computational benchmarks)

• discussion and future work
  – reflect on your approach strengths, weaknesses, limitations
  – lessons learned
  – what do you know now that you didn't when you started?
  – future work
  – what would you do if you had more time?

• conclusions
  – summarize what you've done

Sample outlines: Design study II

• data and task abstractions
  – analyze your domain problem according to book framework (whichever)
    – include both domain-language descriptions and abstract variables
      – split into data vs task, then domain vs abstract - or vice versa
    – typically data first then task, so that can refer to data abour within task sections
  – solutions
    – describe a solution idiom (visual encoding and interaction)
      – analysis according to book framework (how)
      – justify your design choices with respect to alternatives
      – if significant algorithm work, discuss algorithm and data structures
  – implementation
    – medium-level implementation description
      – specifics of what you wrote vs what existing libraries/SDKs/components do

Sample outlines: Other types

• see page for other three project types

Report marking

• required at least material I've listed
  – implementation, analysis survey

• possible marking scheme (may change!)
  – 14% for each of
    – Intro Abstraction, Solutions, Implementation, Results, Discussion, Style
  – 2% for remainder of Related Work credits
  – most of that mark from update portion
• reminder: project content is 50% of entire project mark
  – entire report is only 18%
Come talk!

• encourage meeting with me to get advice before submitting
• chance to get feedback while you can still act on it
• optional, not mandatory
• do send email to schedule, can't meet with all 18 of you in last few days!
• office hours will continue for next two weeks

Reproducibility: Levels to consider

• paper
  – post it online
  – make sure it stays accessible when you move on to new place
• algorithms
  – well documented in paper itself
  – document further with supplemental materials
• code
  – make available as open source
  – pick right spot on continuum of effort involved, from minimal to massive
  – just put it up warts and all, minimal documentation
  – well documented and tested
  – build a whole community

Why bother with reproducibility

• moral high ground
• enlightened self-interest
  – make your own life easier
  – you’ll be cited more often

Reproducible and Replicable Research

Reproducibility: Levels to consider, cont.

• data
  – make available
  – techniques/algorithm/data used by system
  – what open source available for full output, typically advance planning
• parameters
  – how exactly to regenerate出席会议 figures, tables
  – example: http://www.cs.uchicago.edu/~dd/papers/cd/S1

Remarkable introspection on methods

• thoughtful willingness to change standards of field

Terrain of blog critiques

• meta: methods for methodological critique
  – how they have some paper retractions
  – do they have any narrations for methodological considerations
  – do they agonize about difficulty of getting failure-to-replicate papers accepted
  – we hardly ever try to do such work
  – they are a much older field
  – we're younger might our power hierarchies thus be less entrenched?
  – they are a much older field
  – they have some paper retractions
  – they have some paper retractions
  – they have some paper retractions
  – they have some paper retractions

When and how will this storm hit visualization?

• when and how will this storm hit visualization?
  – they're ahead of us
  – they have some paper retractions
  – more than 24 for 2-person projects (including questions)
  – more than 24 for 2-person projects (including questions)
• structure
  – slides required
  – demos encouraged
  – screenshots and/or video for backup strongly encouraged
  – but do practice, demos eat up time!
  – should be standalone
• logistics
  – send me your slides by 11am if you’re using my laptop, by 6pm if using yours
  – subject: 507 submit final presentations

Reproducible research

• 5: 15 minutes with free tools
• 4: 15 minutes with proprietary tools
• 3: considerable effort
• 2: extreme effort
• 1: cannot seem to be reproduced
• 0: cannot be reproduced

Replication: crisis in psychology, medicine, etc

• early rumblings left me with (ignorable) qualms
  – papers: Is most people doubling down and defending previous work
  – many willing to repudiate (their own) earlier styles of working
• thoughtful willingness to change standards of field

Roughly

• decision: reproduce

Marking: Course overall

• 50% Project
  – 2% Pitches
  – 10% Proposal
  – 6% Status Updates
  – 14% Final Presentation
  – 18% Final Report
  – 50% Content
• 20% Presentations
  – 75% Content
  – 25% Delivery
  – 5% Style
• 547 submit final presentations

When and how will this storm hit visualization?

• length
  – 12 min for solo, 15 min for 2-person projects (including questions)
  – 12 min for solo, 15 min for 2-person projects (including questions)
• structure
  – slides required
  – demos encouraged
  – screenshots and/or video for backup strongly encouraged
  – but do practice, demos eat up time!
  – should be standalone
  – don’t assume audience has read proposal or update (or remembers your pitch)
• code freeze
  – no additional work on project after presentation deadline
  – additional three days to get it all written down coherently for final report
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Reproducible and Replicable Research

Reproducible Research in Signal Processing - What, why, and how.

• 0: cannot be reproduced
• 1: code freeze
• 2: extreme effort
• 3: considerable effort
• 4: 15 minutes with free tools
• 5: 15 minutes with proprietary tools

Reach out: contacting authors whose work you discuss before making things public

• 18% Final Report
• 14% Final Presentation
• 10% Proposal
• 6% Status Updates
• 2% Pitches
• 50% Project
• 20% Presentations
• 75% Content
• 25% Delivery
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Final presentations: Tue Apr 25 1-5 FSC 2300A

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