Writing Papers and Giving Talks

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www.cs.unh.edu/~ruml/papers/papers-and-talks.pdf

Welcome to the ICAPS Community!

Introduction
- Welcome
- Why Do The DC?
- Outline
- The Conversation
- Research=Fun

Writing Papers

Giving Talks

Conclusion

1. planning is awesome!

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1. planning is awesome!
2. planning people are awesome!

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Conclusion

1. planning is awesome!
2. planning people are awesome!
3. ICAPS is awesome!

Why Do The DC?

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Writing Papers

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Conclusion

1. (money)
2. dissertation outline
3. meet peers
4. meet mentors
5. practice presenting
6. embarrassing questions

Outline

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Conclusion

1. intro: research
2. writing papers
   - reviewing papers
3. giving talks

your questions

Research: The Grand Conversation

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Writing Papers

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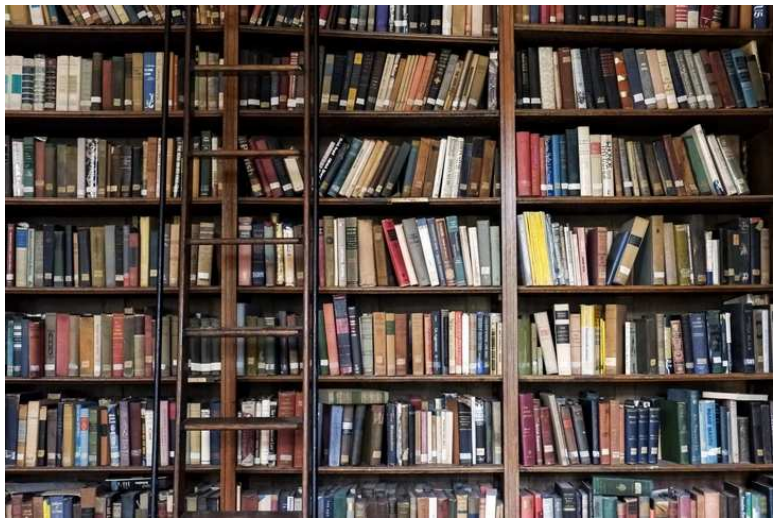
1. around the world
2. over centuries
3. unit is the paper
4. threads old, current, and new
5. welcomes new voices



How to take part:

1. listen before speaking
2. think before speaking
3. speak clearly
4. enjoy just being a part of it

Research = Organized Fun

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Hey guys, look what I found!

1. What is it? : clarity
2. Have we seen it before? : novelty
3. Why should we care? : significance
4. What does it do? : characterization
5. Is it real? : evidence, correctness

Avoid cynicism:

1. ticket to high-paying job
2. chance to show how smart you are
3. another notch on your belt/CV
4. military mission

Introduction
Writing Papers
- Basics
- Outline
- Significance
- An Example
- Details
- (Reviewing)
- Open Access

Giving Talks
Conclusion

Writing Papers

Basics

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Giving Talks
Conclusion

- Know the abstract (pitch/contribution) before you start!
- Follow convention (Hendler).
- Avoid notation. Spellcheck/proofread.
- Pretend reviewer is parent of small children or running a large center.
- Careful with claims!
- Connect to the big picture: what are implications beyond this specific problem?
  - my goal: problem $\rightarrow$ algorithm
- Don't submit work that isn't ready. / Keep trying.
- Know venue before submitting. Work up if necessary.

Outline

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Giving Talks
Conclusion

- abstract: crucial! (decision on page 1)
- motivation
- problem statement
- previous work
- the insight (approach, solution)
- illustrative example
- results (theorems, experiments)
  - pretend reader can't see plots
  - state implications of data/theorems explicitly
- discussion (weaknesses, extensions, related work)

aabb vs abab

Significance

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Giving Talks
Conclusion

- novelty
- importance
- interesting
- results difficult to obtain
- correct / convincing

Remember: few care about your exact problem!

experiments per se are not significant / the goal: Avi example

An Example: Would You Accept This Paper?

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Giving Talks
Conclusion

- we address problem X studied by Jones et al (2021)
- several algorithmic modifications
- improved performance on most benchmark instances
- new state of the art for problem X

When or when not?

Details

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Giving Talks
Conclusion

- significance often requires detailed previous work
- leave time for more research after first draft
- specific example, then generalize (Korf)
- explicitly provide support for each claim
- negative results only when useful
- the better the draft, the better the comments (Rao)

(Reviewing)

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Giving Talks
Conclusion

- pointless problem
- hidden/poor assumptions
- unconvincing evidence: poor benchmarks, weak theorems, scanty experiments, weak baselines
- is method advantaged / surprising?
- summary doesn't match results!
- experiments don't test claims / results don't support claims
- nothing surprising / learned

be explicit and specific

justification and citations for previous work

no additions without subtractions

counterexamples

enjoy the discussion!

Open Access

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Giving Talks
Conclusion

- library budgets
- inclusion
- very lucky to have JAIR, AAAI

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- Slides
- (Job Talks)

Conclusion

Giving Talks

Talks

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Conclusion

- Have something to say
  - explicitly promise and deliver (Winston)
- Organize hierarchically
  - lie (me) / spiral (Winston)
- Teach it
  - don't over-estimate the listener (as in writing)
  - one punchline per slide
- Own the room
  - everyone gets nervous
  - lights up, blinds open (Winston)
- Talk to people
- Learn from others' talks
- Practice, practice, practice

Slides

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Conclusion

- teach: emphasize motivation, intuition, significance
  - situate your work in historical context
  - provide necessary background
  - goal: want to read paper
- summary / elevator pitch, then outline slide
- memorize first and end
- minimize text, maximize data/ink (within reason)
- first talk: more text, plan words
- avoid cultural/social references
- stand near, point
- don't snow
- cite others, use their pictures (w/ attribution)
- remote presenter, but don't go too fast
- name, title, #/# in footer. use graphics, but no effects

(Job Talks)

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Conclusion

- more important than learning their names
- sleep = prep for questions
- you have 5 minutes to convey vision
- long talks are different: signpost!
- industry may ask more questions
- choose work carefully: show depth, indicate breadth
- listen carefully to questions
- have a backup

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- Resources
- Summary

Conclusion

Resources

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Summary

- DC web page
- Sven Koenig's *AI Magazine* article
- many groups have an advice page
- Pat Winston's video on *How to Speak*
- examples: Leslie Kaelbling, Larry Lessig

Summary

Introduction
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Conclusion
Resources
Summary

- Writing and speaking = teaching
- Don't overestimate your reader / audience
- Join the conversation!

Good luck!

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