

CS 309: Autonomous Robots

FRI I

How to Read Papers

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http://justinhart.net/teaching/2020_spring_cs309/

Quick Notes

- Assigning your first paper tonight
 - S. Sebo, P. Krishnamurthi, B. Scassellati. “I Don’t Believe You”: Investigating the Effects of Trust Violation and Repair. HRI 2019
 - Due Monday 11:59pm
 - Paper discussion in Tuesday’s class

Research Papers

- Document scientific research
- Subject to peer-review prior to publication
- Do a handful of things
 - Discuss & test a hypothesis
 - Develop a new system or method
 - Survey other papers (generally only journals)
 - Discuss a theory (workshop papers & letters)

Conference Papers

- A call for papers (CFP) is issued 6-8 months prior to the conference
 - But everyone knows when the major conferences are (they happen every year), so everyone know something about the deadlines in advance
- Papers are submitted by the deadline
- Accepted papers are presented as talks or posters
- Because computer science moves very quickly, most of the action is at conferences

Journal Articles

- Collected continually
- Generally more prestigious than conference papers
- Publications in a top journal can be a career maker
 - Science
 - Nature
 - In Robotics
 - Journal of Field Robotics
 - International Journal of Robotics Research
 - Science: Robotics (new)
 - Journal of Human-Robot Interaction

The Peer-Review Process

- At the top
 - Journals have an editorial board
 - Conferences have a program committee (PC)
- (Meta-) Reviewers are appointed by the editors or PC
 - Generally 3
 - More for controversial papers or important topics
 - The reviews
 - The reviewers read the paper and score it
 - They also write an assessment
 - The meta reviewer writes a meta review from the reviews

For a Conference

- PC Meeting
- Triage
 - Papers are ranked by score
 - The basics of the paper are discussed (by the meta)
 - Top & bottom scores get a brief few words
 - Two lines are drawn
 - Above the top line, the papers are in without discussion
 - Below the bottom line, the papers are rejected without discussion
- Re-Ranking
 - Everything in the middle is debated and re-ranked
- Selection
 - Some papers are selected for oral presentations
 - Topics of major, general interest
 - Very well-done work
 - Some are selected for poster presentations
 - Now considered on-par with oral presentations, this wasn't always the case
 - Some are rejected

For a Journal

- The editors select what is published and what is not based on the recommendations of the reviewers
 - But the reviewers have scores that say
 - Accept
 - Minor Revision
 - Major Revision
 - Reject
 - (Sometimes) Not Suitable for Publication
 - Before going to review the editor can use
 - Summary Reject
- A revision is an invitation to resubmit your work after changing it to fit the reviewer's recommendations
 - The same reviewers will often review the paper next time.
- Generally, if the experiment is good enough, the paper will get in after revision

Two-Round Review

- Some conferences use two-round review
- The authors read the review
- They write a “rebuttal”
 - For papers that definitely will get in, this is just a thank-you note
 - For papers that definitely will be rejected, this is also a thank-you note
- The rebuttal
 - Addresses the reviewers’ concerns
 - Promises to fix them or explains why the reviewers are incorrect (politely)
- The reviewers read the rebuttal
- The reviewers change their scores
- Then it goes to the program committee

After a Paper Acceptance

- Prepare the “camera-ready” paper
 - This is the version that will be printed
 - The other is sometimes called the “review copy”
- Typesetting
 - Modern typesetting uses LaTeX for most conferences and journals
 - The journal gives you a “template” and LaTeX makes it look correct for print
 - You do not format, as in WYSIWYG editors like Word or Google Docs
 - Some publications will have a copy-editor or typesetter
 - They will ask you to change the paper in ways that makes the print look better
 - This is much less common today, but once was standard practice
 - Generally, this is for groups that emphasize having a particularly beautiful appearance in print

Not all papers are created equal

- At publication time
 - Journals are generally at the top
 - Conferences are second place
 - Workshops
 - Special sessions at conferences discussing a specific hot topic
 - Symposia
 - Like workshops that are not hosted at conferences
 - Workshops & Symposia emphasize good discussion
 - This means that the peer-review process may be very “light” for work that they think will be interesting to talk about.
 - Arxiv
 - Pre-print papers are hosted on Arxiv to benchmark if authors might have been the first to an idea.
 - They are not peer-reviewed
- Generally, it is acceptable to move work “up” this food chain.
 - But they often ask that you add something when you move up.

Citations

- People “score” papers based on citations
 - And the citations of the papers that cite them
 - I10 index – How many papers citing your paper had more than 10 citations
 - h index (for an author) – Highest number of papers (h) that have been cited at least h times
- Influential papers have many citations
- Journals and conferences are ranked in part by these scores
 - This is their “selectivity”
 - The ranking is sort of informal

Reading Research Papers

- Read critically
 - Is this outdated, possibly?
 - Can this live up to its claims?
 - What exactly was claimed?
 - Can I improve this?
 - Can I use this?
- Take inspiration for your own research
- Use in your systems
- Understand the topic better