How to Explore Background/Related Work
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<u>Why?</u>
- Catalyze/spark ideas in your thinking
- Provide context for your audience
- Contribute knowledge of a field's structure to others — bring order

<u>Where?</u>
- Web search with keywords for 3-5 *recent* papers in the area
- Find key **researchers** by read *recent papers'* related work sections
- ACL Digital Library (DL)
    - SIGCOMM
    - MobiCom
    - MobiSys
    - CoNEXT
    - SenSys
    - UbiComp (IMWUT)
    - SOSP, OSDI
- IEEE Xplore
    - Journals and Transactions: mature, finished work
    - Conferences: more preliminary work
    - Magazines: introductions to area, tutorial articles very useful
- USENIX
    - Free and open on the website, conferences premier venues
    - NSDI, OSDI

<u>When?</u> Now, and continuously. "The best time to plant a tree was 25 years ago. The second-best time to plant a tree is today." —Eliud Kipchoge

<u>How</u>: How to read and manage many papers? <u>S</u>kim, <u>F</u>ollow, <u>O</u>rganize.

- Skim (*i.e.*, how to read a paper)
    - Well-trodden topic, essays & papers exist on the topic
    - Title and abstract (but only a bit), authors (how many? Affiliations?), metadata (citations, journal or conference)
    - Skim in multiple passes, highlight: key differences versus other work
        - <mark>Highlight</mark> key properties
        - Highlight key results
    - Then deep-dive if warranted
    - *Balance* deep-dive reading with *your* thinking

- Follow (trace and traverse the citation tree)
    - Leverage others' work (look up papers they cite, skim as per above)
    - When searching for new papers, prioritize by citation counts, year

- Think creatively about keywords to search for, try combos

- Organize (build your database)
  - Throughout the process, retain highlighted papers
    - Probably all electronic these days
    - *Zotero* is a great tool! There are others…

1. Hierarchical folder system
   - Let file names be meaningful (authors, year, journal?)
   - Color tags in your filesystem for meanings
     - Categories, approaches, important paper?
   - Create an ontology
2. Maintain a bibliography file
   - Bibtex, EndNote, etc.
   - Sync with papers, easy transition between reference and paper
     - Need to back-check paper while writing
     - Need to cite reference while writing

Addendum: Writing the Related Work Section (Slide)

Once you follow the above instructions, the Related Work section of your report (or Related Work slide, in a talk) almost writes itself!

- Refer back to the ontology above
- One paragraph (bullet) = one 1st-level category in ontology
  - <u>Formula</u>: mini-introduction sentences (words), cite [2,4,6,8], contrast sentences (words) to distinguish your work from those
    - Maybe repeat the formula in one paragraph (bullet) to split down to 2nd-level in ontology
  - Repeat the formula in subsequent paragraphs (bullets) for each 1st-level category