Literature Review Tips

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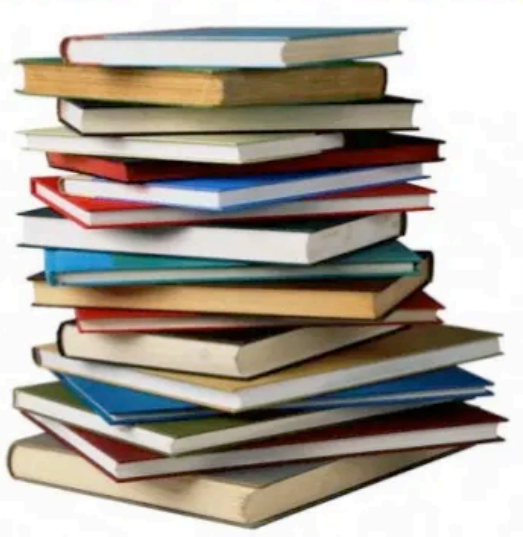

Why Literature Reviews?

- Systematic Literature Review [1,2,…]
- “Informal” Related Work Search

(Gray literature reviews are not discussed here)

[1] Guidance on Conducting a Systematic Literature Review. Yu Xiao, Maria Watson. ACSP: https://journals.sagepub.com/doi/full/10.1177/0739456X17723971

[2] Methods for Literature Reviews. Guy Paré and Spyros Kitsiou. Handbook of eHealth Evaluation: An Evidence-based Approach: https://www.ncbi.nlm.nih.gov/books/NBK481583/

…

Main Steps

0. Look for existing reputable surveys (or mapping studies) on your topic
   - Conferences and journals, ACM Computing Surveys, …

1. Carefully define the search query
   - E.g., “adversarial robustness” AND “adversarial examples”
2. Identify search targets
3. Collect and filter results
4. Apply inclusion and exclusion criteria
5. Analyze and categorize the findings
6. Perform forward and backward search (snowballing)

Search Query

- Usually a regular expression, combination of ANDs and ORs, e.g.,
  - Search: = ML + (Trust| Example | Attack)
  - ML := model | classifier | "machine learning" | "deep learning" | "neural net”
  - Trust:= trustworthy | trust | robust | advers
  - Example := adversarial + (example | sample | input)
  - Attack := (black-box | white-box | grey-box | adversarial | evasion | transfer | "transfer learning”) + attack
- Can also use this to search for surveys!
- Make sure you define keywords in the right format for the search engine
  - Not all expressions are possible
  - Different formats for different engines
  - Usually need to split the search into multiple queries
- Debug!

Where to Search

- Main Digital Libraries
  - ACM Digital Library: https://dl.acm.org/
  - IEEE Xplore: https://ieeexplore.ieee.org/Xplore/home.jsp
  - SpringerOpen: https://www.springeropen.com/
  - Springer Lecture Notes in Computer Science (LNCS): https://link.springer.com/search?facet-series=%22558%22
  - Usinex Proceedings: https://www.usenix.org/publications/proceedings
  - …

- Main Search Engines and Unified Repositories
  - Google Scholar: https://scholar.google.com
  - Scopus: https://www.scopus.com/
  - Microsoft Academic: https://academic.microsoft.com
  - Semantic Scholar: https://www.semanticscholar.org
  - CiteSeerX: https://subjectguides.uwaterloo.ca/citeseerx
  - ResearchGate: https://www.researchgate.net/
  - Mendeley: https://www.mendeley.com/
  - dblp: https://dblp.org
  - …

Result Filtering

By the search query +

- Years [2016-date]
- Publication values (not great)
  - CORE Ranking for Conferences (A* and A)
  - CORE Ranking for Journals (A* and A)
  - Google Scholar ranking
  - Journals ranking based on Journal Citation Report (JCR)
- Citation count (think how to handle more recent papers)

Better to define the search query accurately...

Inclusion/Exclusion Criteria

- Clearly state what is in scope
  - E.g., new techniques, approaches designed for NN, etc.
- Clearly state what is not in scope
  - E.g., surveys and literature reviews, approaches not designed for NN, etc.

This step can usually be done by reading title/abstract/(intro)

Analyze the Categorize the Findings

- Define categories and “bucket” papers by types
  - E.g., by the classifier, domain, type of technique, attacker knowledge, etc.
- I usually use MindMap/FreeMind for categorization

Forward and Backward Search (Snowballing)

- For the most prominent papers in your categorization
  - Look at papers they cite (backward)
  - Look for papers that cite them (forward)

- Usually some fundamental papers are cited by many related approaches
  - can help quickly identify relevant related work

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Keep record of all steps (how many papers found, how many filtered out and why...)

More Info

- Search the literature for how to do literature surveys ☺
- Some pointers and other info is in the “Welcome to ReSeSS” page