How to Conduct a Literature Search

Prerequisites

- You MUST know how to use Google, GoogleScholar, Boolean operators
- You MUST have a reference management system (e.g., Zotero, Mendeley)
- You MUST get access to NUS Library
  - Add NUS proxy
  - Add the NUS library to GoogleScholar
- Reading paper
  - See How to Read a Paper Efficiently (By Prof. Pete Carr)
  - Read How to read a paper by Prof. Abhik
  - If you are not sure whether the paper is **relevant** or not, follow Literature Survey Decision Charts
  - For each paper you read, you MUST create a summary
    - e.g. Topic, Question, Significance, Intuition, Context, Main assumption, Limitations, Alternatives, Future directions, Institution, **Summary** *(problem, why it's important, previous work, contribution, methods, take away message)*, **Research questions**, Independent variables, Tasks, Dependent variables, **Keywords**, **Theory**, Guidelines
- Read Step into a new area by Shan
- Read Finding a Topic by Prof. Tan Chuan Hoo
- [Optional, but good] Literature review, Read Power papers (part 2) (page 9-14) by Dr. Terence Sim

HCI conferences/journals (see)

- Top tier: CHI, TOCHI, UIST, UbiComp/IMWUT, CSCW for groups
- Second & third ties: IJHCS, MobileHCI, TEI, ASSETS for elder/disabled, IUI, Interact, NordiCHI

Steps

* Iterative/cyclic steps

1. Find the "best" **venue** for the topic
   a. e.g. Augmented reality > (IEEE) ISMAR is the best from the technical perspective > search IEEE Xplore database
2. Read (4-6) survey papers/network analysis/ thesis to get an overall idea.
   a. If the area is mature, read books (focused on the topic of interest) instead of papers since books consolidate a large number of papers together
   b. You can use CSUR Home and GoogleScholar to find survey papers
3. ***Identify the keywords, refine keywords and search again**

      a. If you don't find many papers, (most probably) you are not searching with correct keywords. Use higher (abstract) level keywords
            i. e.g. see <u>Finding Topic</u> (page 14-16) by Prof. Tan Chuan Hoo

4. Search <u>GoogleScholar</u> or <u>Scopus</u> to find most relevant papers and refine keywords (for books use <u>NUS library portal</u>)
5. Identity the related articles for "must-read" **(seminal) papers**
6. Search top HCI venues or <u>ACM Database</u> (and <u>IEEE Xplore</u> if requires), [NOTE: searching in specific venues can be more effective sometimes than finding them in a database]
      a. Check <u>CHI</u>
      b. Check <u>UIST</u>
      c. Check <u>TOCHI</u>
      d. Check <u>CSCW</u> for collaborative works
      e. Check <u>DIS</u>
      f. Check ….
      g. Check IS also if requires (<u>JSTOR</u>, <u>MISQ</u>, <u>Informs</u>)
7. Use https://www.connectedpapers.com/ (or https://elicit.org/, https://slr.ahlab.org/), to identify the connected papers
8. ***Read in-depth to identify the papers related to your research questions**
9. Check patents also, if requires (e.g. for new system)

Once you complete 2-3 full literature searches on different areas, you will learn a lot of tricks to do literature search more systematically and effectively, and identify your own style.

Backward search

- Identify a good paper (e.g. top tier, relevant or similar to your own research questions)
- Read the "Related Work" and find the references they have used
      ○ Read those references based on relevance
- When you read more papers, you will find a few papers which appear in almost all the papers!
      ○ Most probably they are the seminal papers in the area

NOTE: Backward search would be particularly helpful when you find a good paper in the recent few years.

Forward search

- Identify a good paper (e.g. top tier, relevant or similar to your own research questions)
- Identify the papers which have cited this paper. Use <u>GoogleScholar</u> and sort by their citation count and (recent) year
      ○ Read those recently published papers based on relevance
- This will help you to keep your knowledge updated on an area/topic

NOTE: Forward search is particularly helpful when you identify theoretical papers published far from now. Usually, a small area will have established and well-cited good papers. For

example, in the concept mapping area, "the theory underlying concept maps and how to construct them" published in 2006, has 1700+ citations.

A note on the **Recency of papers** reviewed

When it comes to your **literature review**, a general rule would be to:

- Focus more on **recent papers (published within the last 10 years)** than on older papers.

- Survey **'seminal papers'**, i.e. highly cited papers, even if they may be old publications. E.g. The original paper on Fitts Law was published in the 1940's, but it is still an important paper to read and cite.

Use your discretion! Choose to read and cite papers of any category that may offer you insights for your current project (even as you prioritize recent papers over older ones).