How to do a Literature Survey
(How to Find Related Work)

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Content

- What is a literature survey & why do we need it?
- Where can we find the related works?
- How to navigate from a paper?
- How to select/filter the papers?
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What is a literature survey & why do we need it?

- In the exploring phase, it helps us understand the state-of-the-art.
  - Is this problem solved?
  - What are the existing solutions in solving the problem?
- In the design phase, it helps us claim our work's novelty and differentiate it from other work.
  - Why bother proposing a new solution, given the existing solutions?
  - What is the novelty in my work?
- In the paper writing phase, it's the *Related Work* section in your paper.
  - Missing important references is a major reason for being rejected.

Where can we find the related works?

You can start with Survey papers from ACM Computing Surveys (**CSUR**) or IEEE Communications Surveys & Tutorials (**CS&T**)

Top conferences in **mobile/wireless system** and **ubiquitous computing**

- ACM MobiCom
- ACM MobiSys
- ACM SenSys
- ACM IMWUT/UbiComp

A broader system/network venues

- USENIX NSDI
- ACM SIGCOMM

Machine learning and data mining venues

- NeuraIPS / AAAI / ICLR / ICML
- SIGKDD / WWW

Other CCF-A conferences or conferences on CSRanking

Avoid:

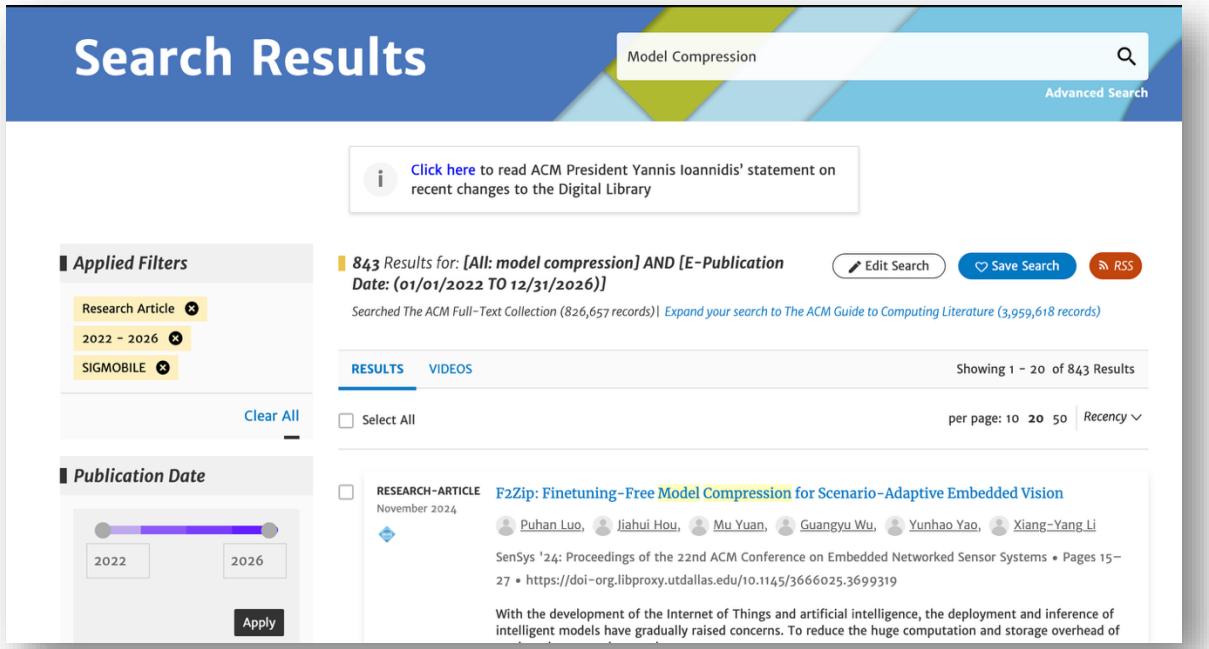
- MDPI Journals
- Random IEEE Conferences
- Random ScienceDirect Journals

Databases:

- ACM Digital Library
- IEEE Xplorer
- Google Scholar

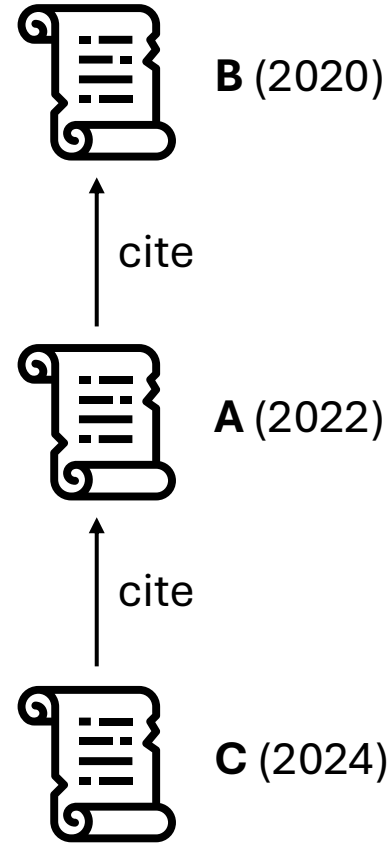
How to use ACM Digital Library

- Apply Filters, for example:
  - ***Content Type:*** Research Article
  - ***Publication Date***: 2022 - 2026
  - ***ACM SIG Sponsors:*** SIGMOBILE (for mobile-related topics)
- This will help reduce the number of potential papers by 10x



How to navigate from a paper (paper A)

- Papers it cited (paper B)
  - What's the well-known work in this direction?
- Papers cite it (paper C)
  - What's the recent progress?
  - Is my idea already proposed in the latest papers?
- Papers from the same group/authors



How to select/filter the papers

- By conference/journals
  - Discussed earlier
- By authors/groups
  - You need to read a lot to be familiar with the authors/groups in the community
- By citations
  - Not applicable for very recent work

How to organize the papers?

- Find some orthogonal dimensions
- Examples:
  - System-related
    - Infrastructure-based / Infrastructure-free
    - Real-time / Not real-time
    - Need hardware modification / Compatible on commodity devices
  - Model-related:
    - Machine Learning / Deep Learning / Large Models
    - Supervised / Unsupervised

	Model on server	Model on device
Supervised Model	[1] [2]	[3] [4]
Unsupervised Model	[5] [6]	Our work!

How to discuss the related work?

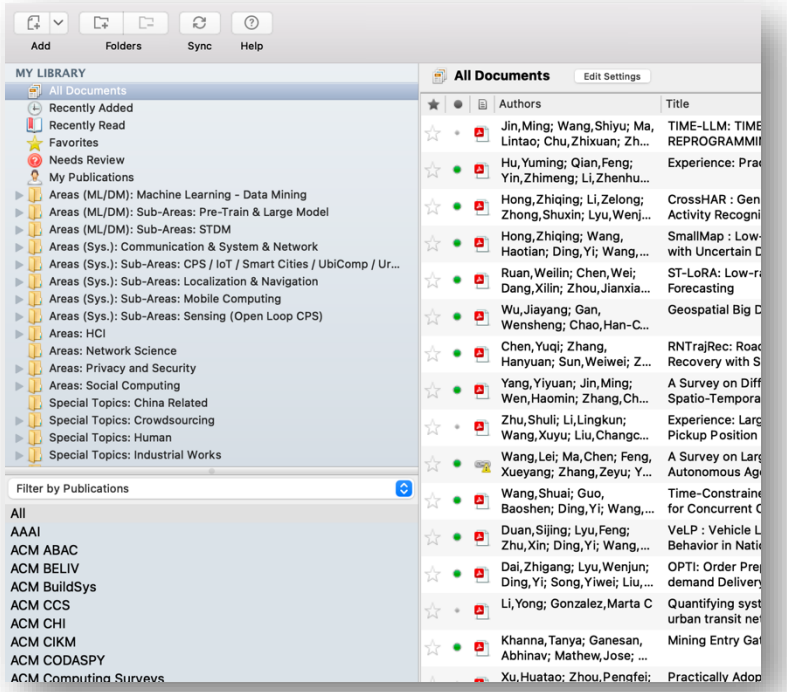
- Give credits to the authors.
  - The papers were accepted for a reason. They must have done some good work.
- Criticize the work politely and fairly.
  - Instead of simply saying the work is not working, you may want to say “the work does not work under certain scenarios (e.g., limited data/resource)”
- Try to categorize the paper and discuss them in groups, instead of commenting each paper individually.
  - Discuss the paper in groups shows that you have some understanding of the problem.
- Don’t miss well-know work on the topics.
  - It’s hard to accept your paper working on a topic that has been solved in a paper that your paper did not discuss. The reviewer tend to think that you’re not aware of the work hence doing duplicate work.

Advanced topic: No related work?

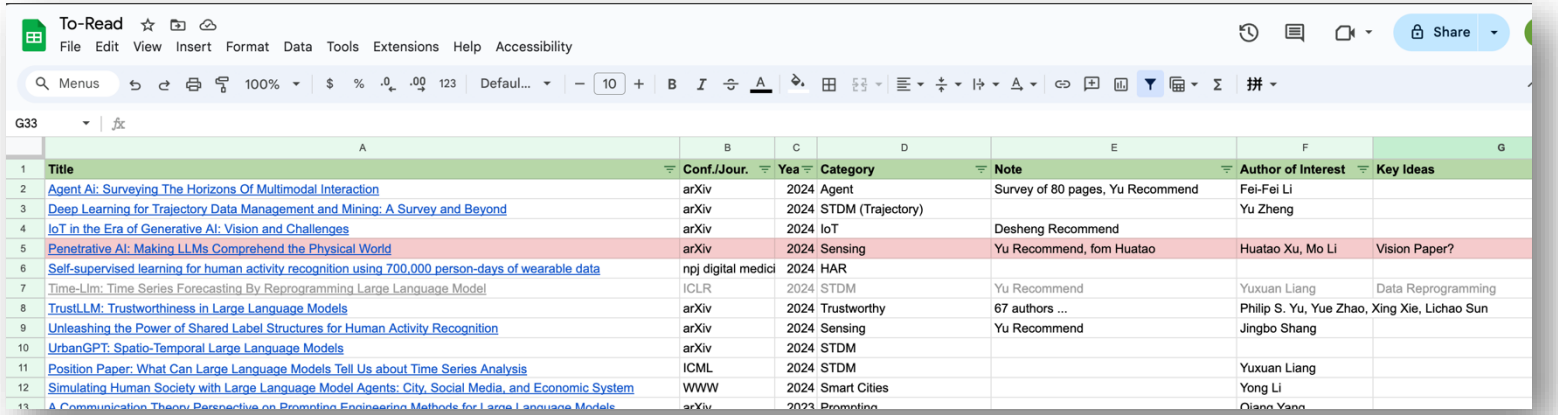
- Possibility 1: A completely new problem.
- Possibility 2: Not a new problem, but no one tried to solve it.
- Possibility 3: Failed to use the accurate keywords.

Tools Recommended

- Mendeley



- Google Sheet



	A	B	C	D	E	F	G
1	Title	Conf./Jour.	Yea	Category	Note	Author of Interest	Key Ideas
2	Agent Ai: Surveying The Horizons Of Multimodal Interaction	arXiv	2024	Agent	Survey of 80 pages, Yu Recommend	Fei-Fei Li	
3	Deep Learning for Trajectory Data Management and Mining: A Survey and Beyond	arXiv	2024	STDM (Trajectory)		Yu Zheng	
4	IoT in the Era of Generative AI: Vision and Challenges	arXiv	2024	IoT	Desheng Recommend		
5	Penetrative AI: Making LLMs Comprehend the Physical World	arXiv	2024	Sensing	Yu Recommend, fom Huatao	Huatao Xu, Mo Li	Vision Paper?
6	Self-supervised learning for human activity recognition using 700,000 person-days of wearable data	npj digital medici	2024	HAR			
7	Time-Llm: Time Series Forecasting By Reprogramming Large Language Model	ICLR	2024	STDM	Yu Recommend	Yuxuan Liang	Data Reprogramming
8	TrustLLM: Trustworthiness in Large Language Models	arXiv	2024	Trustworthy	67 authors ...	Philip S. Yu, Yue Zhao, Xing Xie, Lichao Sun	
9	Unleashing the Power of Shared Label Structures for Human Activity Recognition	arXiv	2024	Sensing	Yu Recommend	Jingbo Shang	
10	UrbanGPT: Spatio-Temporal Large Language Models	arXiv	2024	STDM			
11	Position Paper: What Can Large Language Models Tell Us about Time Series Analysis	ICML	2024	STDM		Yuxuan Liang	
12	Simulating Human Society with Large Language Model Agents: City, Social Media, and Economic System	WWW	2024	Smart Cities		Yong Li	
13	A Communication Theory Perspective on Prompting Engineering Methods for Large Language Models	arXiv	2023	Prompting		Qiang Yang	

- ChatGPT