RESEARCH LECTURE

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ELOQUENT ALGORITHMS

RESEARCH LECTURE

WHY SOCIAL SCIENCE RESEARCH BOOSTS COLLEGE ADMISSIONS PROSPECTS

Develops Critical Thinking: Engaging in social science research enhances analytical skills, allowing students to approach complex problems with a critical mindset—qualities highly valued by elite colleges.

Demonstrates Initiative & Curiosity: Conducting research shows a student's initiative, intellectual curiosity, and dedication to exploring important societal issues, which stand out in competitive admissions.

Builds Stronger Applications: Research experience provides tangible evidence of a student's ability to conduct independent work, leading to compelling essays and stronger recommendation letters.

Contributes to Community & Beyond: Social science research often addresses real-world problems, showing a commitment to positive change—a trait colleges seek in future leaders.

RESEARCH STEPS

Google the topic area in general

Wikipedia
Google
Stanford Encyclopedia of Philosophy
News Reports

Look for specific topics in google scholar

Read research papers

HOW TO READ A RESEARCH PAPER

- Introduction and conclusion/results are the most important for us

- Approach and method are important also

- Look at citation and footnotes they are how you understand the topic area

SUMMARIZE LITERATURE REVIEW

Full Literature Review

1. *General problem/task definition*: What are these papers trying to solve, and why?

2. *Concise summaries of the articles*: Do not simply copy the article text in full. We can read them ourselves. Put in your own words the major contributions of each article.

3. *Compare and contrast*: Point out the similarities and differences of the papers. Do they agree with each other? Are results seemingly in conflict? If the papers address different subtasks, how are they related? (If they are not related, then you may have made poor choices for a lit review...). *This section is probably the most valuable for the final project, as it can become the basis for a lit review section..*

4. *Future work*: Make several suggestions for how the work can be extended. Are there open questions to answer? This would presumably include how the papers relate to your final project idea.

5. *References section*: The entries should appear alphabetically and give at least full author name(s), year of publication, title, and outlet if applicable (e.g., journal name or proceedings name). Beyond that, we are not picky about the format. Electronic references are fine but need to include the above information in addition to the link.

Credit Stanford CS224U

Article Summary Memo

- the central research question (what are they studying?)

- the context of the study (where is the study taking place?)

- what type of data is being studied?
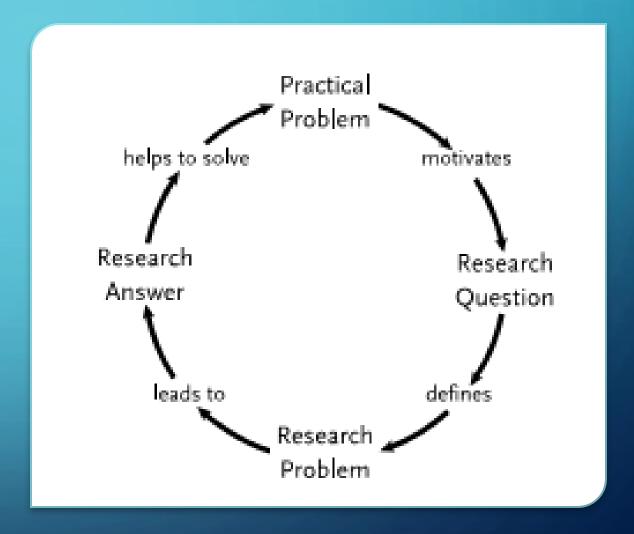
- what do the authors find?

Credit University Chicago – DPSS program

HOW TO FORMULATE A GOOD RESEARCH QUESTION

HOW TO FIND A RESEARCH PROBLEM

- What data is available to you?

- What are you interested in?

- What are issues in the literature?
  - Future work?
  - Contradictions
  - Inconsistencies
  - Things you are not happy with?
- Is there a newer more powerful method?
- Can you add data to it?

If a source says X and you think Y, you may have a research problem – CR Page 63

HOMEWORK 1

- Sign up for Overleaf Account – [Link](#)
    - Begin learning how to write in LaTax

- Find a dataset that you are interested in learning more about on:
    - https://www.kaggle.com/datasets   <- prioritize this one
    - https://huggingface.co/datasets
    - https://paperswithcode.com/

- Find one research paper you are interested in analyzing and going in depth and answer the following questions:
    - Please summarize each article in one paragraph describing: (1) the central research question (what are they studying?); (2) the context of the study (where is the study taking place?); (3) what type of data is being studied?; (4) what do the authors find?
    - What is the area you would like to contribute to?

- Consideration what data can you use to analyze the area, is the field big enough for you to have sufficient prior work