FYP Template Sections

# Literature Review

Bias in datasets has been a long-standing problem throughout the field of artificial intelligence (AI) for a long while as it negatively impacts any model or process which utilises it. These negative affects range from unrepresentative results, discrimination/fairness issues as well as ineffective decision making and a variety more. Throughout this research paper only bias in visual datasets specifically the **LAION-5B** dataset will be considered due in part to its ease of access and open-source nature. Bias in visual datasets can present itself in a variety of different forms ranging from **selection**, **capture/framing**, **label**, and **negative set** bias [1]. This research paper will focus mainly on **selection bias** in the dataset.

Considering this, bias is taken into consideration with the utmost importance and given the appropriate care to reduce its affect. This

[1] [A survey on bias in visual datasets](https://www-sciencedirect-com.ejournals.um.edu.mt/science/article/pii/S1077314222001308?via%3Dihub)

A literature review is a critical summary and analysis of existing research and scholarly works relevant to your research topic. It provides context, identifies gaps, and highlights the current state of knowledge in your field. Here are the main points that should be mentioned in a paper's literature review:

1. \*\*Introduction and Context Setting\*\*:

- Introduce the topic of your review and explain its significance.

- Provide background information to contextualize the research area.

- Define key terms and concepts to ensure clarity.

2. \*\*Purpose and Scope\*\*:

- Clearly state the purpose of the literature review, such as identifying trends, evaluating methodologies, or highlighting gaps.

- Specify the scope of your review: Which aspects of the topic will you cover? What will you exclude?

3. \*\*Research Questions or Objectives\*\*:

- State the specific research questions or objectives that guide your literature review.

- These questions should help you focus on what you are trying to achieve through your review.

4. \*\*Inclusion and Exclusion Criteria\*\*:

- Detail the criteria you used to select the sources you're including in your review.

- Explain why certain sources were excluded (e.g., outdated, not directly relevant, etc.).

5. \*\*Organizational Framework\*\*:

- Describe the structure you'll use to present the literature. This could be chronological, thematic, methodological, etc.

- Explain the rationale behind your chosen structure.

6. \*\*Synthesis and Summary\*\*:

- Summarize the key findings and arguments of each source you're reviewing.

- Group sources based on common themes, methodologies, or trends.

- Identify areas of agreement and disagreement among sources.

7. \*\*Methodological Evaluation\*\*:

- If applicable, discuss the methodologies and research designs used in the reviewed studies.

- Evaluate the strengths and limitations of different methodologies.

8. \*\*Gaps and Controversies\*\*:

- Highlight gaps in the current literature that your research aims to address.

- Identify any controversies, conflicting findings, or unresolved issues in the field.

9. \*\*Theoretical Frameworks\*\*:

- Discuss the theoretical frameworks or models that researchers have used in their work.

- Evaluate the applicability and limitations of these frameworks.

10. \*\*Relation to Your Research\*\*:

- Connect the findings from the reviewed literature to your own research objectives and questions.

- Explain how your research builds upon, contributes to, or diverges from existing studies.

11. \*\*Critical Analysis\*\*:

- Offer a critical assessment of the strengths and weaknesses of the reviewed studies.

- Discuss the credibility of the sources, potential bias, and methodological limitations.

12. \*\*Future Directions\*\*:

- Suggest potential areas for future research based on the gaps and limitations you've identified.

- Highlight opportunities for advancing the field.

13. \*\*Conclusion\*\*:

- Summarize the main insights from your literature review.

- Emphasize the significance of your research in light of the existing knowledge.

Remember that a well-structured literature review demonstrates your understanding of the field, your ability to critically analyse previous research, and how your research fits into the broader academic conversation.