

THE LITERATURE REVIEW

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Literature Review (or Literature Survey)

- The purpose of a **literature review** is to summarize an area of research in a way that requires you to
 - investigate the topic by forcing you to examine, describe, and evaluate how each source addresses related topics
 - organize and classify the sources in a reasonable manner for the benefit of the reader.
- Related work includes
 - Background information ("Cancer is a genetic disease")
 - Articles motivating the research problem (related to significance)
 - "Bladder cancer is the 4th most common cancer in males..."
 - Articles describing similar research objectives
 - KMplot and Oncomine are two databases for analyzing genomic data in cancer
 - Articles describing other ways of answering the question
 - Articles describing how related methods have been used in other studies

Literature Review – Why?

- A literature review is necessary for formulating your research question, taking into account what others have done
- In a research paper (and proposal), a literature review
 - provides background
 - includes related work
 - motivates the current research problem
- The literature review will include background in the area of your research but does *not* mention your specific project.

Examples of related work

- Research topic: cellular automata model of traffic flow
 - Statistics for traffic costs and average commuting times
 - Description of various models used to study traffic flow, both mathematical and computational
 - Examples of additional cellular automata models, not (necessarily) related to traffic
 - CA models of influenza
 - CA models of fox and rabbit (predator and prey)
 - Description of questions answered using CA models

Examples of related work

- Research topic: using Twitter data to predict the election outcome
 - Description of twitter, and social media more generally
 - Description of current polling methods
 - Description of other projects looking at predicting elections, e.g., based on the economy, etc
 - Examples of other analyses done using Twitter data
 - As a "social sensor" for Earthquakes
 - Study of user influence on Twitter
 - Examples of where Twitter has been used to make predictions
 - Relationship between Twitter mood and the stock market
 - Using Twitter to predict increased crime rates

Citation format (IEEE styles)

Bibliography

- [1] R. Hisakata, S. 'ya Nishida, and A. Johnston, “An adaptable metric shapes perceptual space,” *Curr. Biol.*, vol. 26, no. 14, pp. 1911–1915, Jul. 2016.
- [2] E. Musk, “The secret Tesla Motors master plan (just between you and me),” *Tesla Blog*, 02-Aug-2006. [Online]. Available (URL omitted for space) [Accessed: 29-Sep-2016].
- [3] C. W. V. Hogue, “Structure databases,” in *Bioinformatics*, 2nd ed., A. D. Baxeavanis and B. F. F. Ouellette, Eds. New York, NY: Wiley-Interscience, 2001, pp. 83–109.
- [4] J. Sambrook and D. W. Russell, *Molecular cloning: a laboratory manual*, 3rd ed. Cold Spring Harbor, NY: CSHL Press, 2001.
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 - Make sure to use the IEEE style - <https://www.zotero.org/styles?q=ieee>

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