

[Home](#) > [Guides](#) > Literature survey

## ◆ GUIDE · LITERATURE REVIEW

# How to write a *literature survey*

A literature survey (or literature review) reports what published research already knows about your problem and where it falls short. **Search IEEE Xplore, Scopus and Google Scholar, screen and read the relevant papers, record each in a comparison table, then write it by theme and end with the gap** your project or thesis addresses.

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Below: what a literature survey is and how its depth changes from B.Tech to PhD, a step-by-step method, the survey table format with a sample, how to write it as paragraphs, citing and plagiarism, and the mistakes that weaken it. The free literature survey table template (an Excel matrix) can be downloaded from the top of this page.

## KEY POINTS

- ◆ **A survey compares, it does not summarise.** It shows how papers differ in method, data and results.
- ◆ **Search the right databases:** IEEE Xplore, Scopus, Google Scholar and Semantic Scholar.
- ◆ **Record every paper in a table** as you read: method, dataset, result and limitation.
- ◆ **Write by theme**, grouping papers that share an approach, not one paragraph per paper.
- ◆ **End with the gap**, the missing piece your project or thesis addresses.
- ◆ **Length and number of papers vary.** Your department and guide set them.

# What is a literature survey, and how long should it be?

A literature survey is the part of your report or thesis that sets out what published research has already done on your problem, compares the approaches, and identifies what is still missing. It is usually Chapter 2, after the introduction, and the same chapter appears under the name literature review. In a [final year project report](#) it justifies your design; in an [M.Tech thesis](#) it leads to the base paper and the improvement you measure; in a [PhD synopsis](#) or [research proposal](#) it establishes the research gap and the questions you will answer.

There is no national rule for its length. Universities and departments set it, and they differ, so check your template and ask your guide. What changes by level is depth:

## What a literature survey must do at each level

| LEVEL                | WHERE IT APPEARS                                                      | WHAT IT MUST SHOW                                                                                         |
|----------------------|-----------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|
| <b>B.Tech / B.E.</b> | Synopsis and project report, often one chapter                        | Existing systems or methods, how they compare, and why your project is worth building                     |
| <b>M.Tech / M.E.</b> | Synopsis, stage I dissertation and the thesis                         | Recent papers close to your problem, the base paper chosen from them, and the limitation you will address |
| <b>PhD</b>           | Proposal, synopsis and a thesis chapter, updated through the research | The state of the field across themes, a clearly argued gap, and research questions that follow from it    |

Lengths and the number of papers vary between universities and departments. Use your department's template and your guide's advice.

## How do you write a literature survey, step by step?

- 1. Define the scope.** Write your problem in one sentence and list three to five keywords and their synonyms, such as “intrusion detection”, “anomaly detection” and “network traffic”.
- 2. Search the databases.** Use [IEEE Xplore](#) for IEEE journals and conferences, [Scopus](#) (Elsevier's abstract and citation database, usually through your

institution's access) for indexed journals across publishers, [Google Scholar](#) for a broad free search, and [Semantic Scholar](#) to follow citations. Combine keywords with AND and OR and filter by year.

- 3. Screen.** Read titles and abstracts and keep only papers that address your problem. Note why you dropped the rest, which helps a PhD review explain its selection.
- 4. Check the source.** Prefer peer-reviewed journals and conferences. Our guide to [Scopus-indexed journals](#) shows how to confirm a journal is indexed.
- 5. Read in layers.** Read the abstract, figures and conclusion first, then the method and results of the papers you keep.
- 6. Fill the matrix.** Record each paper in one row of a table as you read (format below). This is what lets you compare papers later.
- 7. Group by theme.** Sort the rows into groups that share an approach, a dataset or a problem, such as classical machine learning, deep learning and hybrid methods.
- 8. Synthesise and state the gap.** For each theme, write what is known and what is missing, then end the chapter with the gap your work addresses. At M.Tech this gap usually points to your base paper; see [how to select a base paper](#).

## What is the literature survey table format?

The table has one row per paper and the same columns for every paper, so similarities and gaps become visible. This sample uses generic, illustrative entries; replace them with the papers you actually read.

**Sample literature survey table (illustrative rows)**

| AUTHOR & YEAR         | TITLE                                            | METHOD                                            | DATASET                    | RESULT                              | LIMITATION / GAP                                   |
|-----------------------|--------------------------------------------------|---------------------------------------------------|----------------------------|-------------------------------------|----------------------------------------------------|
| Author A et al., year | Example: a CNN baseline for image classification | Convolutional neural network trained from scratch | A public benchmark dataset | Accuracy reported on the test split | Tested on one dataset only; no cross-dataset check |

| AUTHOR & YEAR                | TITLE                                               | METHOD                                            | DATASET                                          | RESULT                                   | LIMITATION / GAP                                       |
|------------------------------|-----------------------------------------------------|---------------------------------------------------|--------------------------------------------------|------------------------------------------|--------------------------------------------------------|
| <b>Author B et al., year</b> | Example: transfer learning with a pre-trained model | Pre-trained network fine-tuned on the target data | The same public dataset plus a small private set | Higher accuracy than the baseline        | Model too large for real-time use on low-cost hardware |
| <b>Author C et al., year</b> | Example: a lightweight model for edge devices       | Compressed network with pruning                   | A public dataset                                 | Faster inference, small loss in accuracy | Accuracy drops on images from new conditions           |

Read down the last column: if several papers share a limitation, that is a candidate gap. The free Excel template at the top of this page adds columns for the venue, indexing, theme and relevance to your work.

In the report, the table usually sits inside the survey chapter or at its end, with a caption such as “Table 2.1: Summary of related work”. It supports the written survey; it does not replace it.

### Stuck on the literature survey?

Send your topic, your level and your review date. The consultation is free.

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## How do you write the survey as paragraphs?

Write by theme, not paper by paper. A list of “Author A did X. Author B did Y.” describes papers but never compares them, and examiners read it as a summary. A thematic paragraph does four things:

- 1. Opens with the theme:** “Deep learning methods have been widely applied to this problem.”

- 2. Groups the papers:** “Convolutional networks trained from scratch [3], [5] report high accuracy on single benchmarks, while transfer learning [4], [7] reduces the data needed.”
- 3. Compares and judges:** “However, most were tested on one dataset, and few report inference time.”
- 4. Links to your work:** “This leaves open whether a lightweight model can hold its accuracy on new data, which this project tests.”

Order the themes from broad to close to your problem, and close the chapter with a short section, often titled Research gap or Summary, that states the gap in one or two sentences. Those sentences become the problem statement and objectives in your synopsis. For how the same gap carries into a paper, see [how to write a research paper](#).

## How do you cite papers and avoid plagiarism in a literature survey?

- ◆ **Cite every paper you discuss**, in the text and in the reference list, in one style. Engineering reports commonly use the [IEEE reference style](#) with numbered citations such as [4].
- ◆ **Use a reference manager** such as Zotero or Mendeley, and give each paper a citation key in your matrix so the table and the list stay in step.
- ◆ **Paraphrase, then cite.** Write each point in your own words; quote word for word only when the wording matters, in quotation marks.
- ◆ **Expect a similarity check.** For theses and dissertations, the [UGC \(Promotion of Academic Integrity and Prevention of Plagiarism in Higher Educational Institutions\) Regulations, 2018](#) treat similarity up to 10% as Level 0 with no penalty, and set rising consequences at Level 1 (above 10% to 40%), Level 2 (above 40% to 60%) and Level 3 (above 60%). The full table is in our [PhD thesis format guide](#).

A survey chapter is where copied abstracts most often raise the score. Rewriting by theme fixes both problems at once: the text becomes yours, and it compares

instead of repeating.

## What mistakes weaken a literature survey?

- ◆ **One paragraph per paper.** It summarises but never compares. Group by theme.
- ◆ **No gap at the end.** Without it, the survey does not explain why your work is needed.
- ◆ **A gap that does not match your work.** The gap you state should be the one your method and results address.
- ◆ **Only old papers, or only preprints and blogs.** Use recent peer-reviewed work, plus the older papers that defined the problem.
- ◆ **Copied abstracts.** They raise the similarity score and add nothing.
- ◆ **A table with no text.** The table supports the discussion; it does not replace it.
- ◆ **Citations that are not in the reference list,** or references never cited in the text.

Need the report or thesis written around the survey? See our [dissertation, report and PPT help](#), and for PhD scholars, [PhD guidance](#) from topic and proposal to the literature review and experiments.

## Frequently asked questions

### How many papers should a literature survey have?



There is no single rule. A B.Tech survey usually covers fewer papers than an M.Tech thesis, and a PhD review covers far more. Your department or guide sets the expectation, so ask them. Cover enough recent, relevant work that the gap you claim is believable.

### What is the format of a literature survey table?



One row per paper, with columns for author and year, title, method, dataset, result and limitation or gap. Some guides add the venue and where it is indexed. The table summarises the papers; the written survey around it compares them by theme and ends with the gap.

### What is the difference between a literature survey and a literature review?



In Indian engineering colleges the two terms are used for the same chapter. Survey is more common in B.Tech and M.Tech reports, and review in theses and journals. Both mean a critical summary of published work that leads to your research gap.

### How recent should the papers in a literature survey be?



Focus on recent work so the gap is current, and keep older papers that defined the problem or the standard methods. Many guides ask for mostly recent papers; check what your department expects.

### Can I copy the abstract of a paper into my literature survey?



No. Copied abstracts raise the similarity score and say nothing about how the papers compare. Write each point in your own words, cite the paper, and quote word for word only when the exact wording matters, with quotation marks.

### Can The Ultimate Project World help with a literature survey?



Yes. Send your topic, your level and any papers you have in the free consultation. We help with the search, build the comparison table, write the survey by theme in your format with citations, and state the gap your project or thesis addresses.

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