

There are three required components for adding search to your Gatsby website: the **search index**, the **search engine**, and **search UI**.

Site search components

Search Component	Description
Search index	The search index is a copy of your data stored in a search-friendly format. An index is for optimizing speed and performance when executing a search query. Without an index, every search would need to scan every page in your site—which quickly becomes inefficient.
Search engine	The search engine indexes your content, takes a search query, runs it through the index, and returns any matching documents. Search engines can be hosted services (like Algolia) or open-source that you can self-host (like Elastic)
Search UI	A UI component on your site that allows users to write search queries and view the results of each query. Some search providers provide out of the box React components that you can drop into Gatsby sites.

Adding search to your site

There are a few ways to approach adding search to your Gatsby-powered site.

Client-side search

It is possible to do all the work in your Gatsby site without needing a third-party solution. This involves writing a bit of code, but using less services. With large amounts of content to index, it can also increase the bundle size significantly.

One way of doing this is to use the `js-search` library:

- [Adding Search with JS Search](#)

There are two Gatsby plugins that support this as well:

- [gatsby-plugin-elasticsearch](#)
- [gatsby-plugin-local-search](#)

Use an API-based search engine

Another option is to use an external search engine. This solution is much more scalable as visitors to your site don't have to download your entire search index (which becomes very large as your site grows) in order to search your site. The trade-off is you'll need to pay for hosting the search engine or pay for a commercial search service.

There are many options available, including both self-hosted and commercially hosted open source:

- [Algolia](#) — SaaS, [has Gatsby plugin](#)
- [ElasticSearch](#) — OSS, commercial hosting available, [has Gatsby plugin](#)
- [Solr](#) — OSS and has commercial hosting available
- [Meilisearch](#) - OSS, [has Gatsby plugin](#)
- [Typesense](#) - OSS, [has hosted version](#), [has Gatsby plugin](#)

Of these, the most common solution is Algolia. The Gatsby docs include a guide to adding Algolia to your site:

- [Adding Search with Algolia](#)

When using Algolia, they host the search index and search engine for you. Your search queries will be sent to their servers which will respond with any results. For UI components, Algolia provides a [React library](#) that has helpful components.

If you're building a documentation website you can use [Algolia's DocSearch feature](#). It will automatically create a search index from the content of your pages.

Elasticsearch also has several React component libraries for search, such as [ReactiveSearch](#).