

## Engineering Village AI: Your questions answered

**Essential FAQs, development insights and future focuses**

### Introduction to EV AI

#### **What is EV AI?**

Engineering Village AI is an intuitive and intelligent tool that applies generative AI (GenAI) to help you efficiently explore academic research content and receive targeted research summaries and insights. Built in close collaboration with the engineering community and powered by reliable Compendex curated data, Engineering Village AI strives to simplify the research process, support knowledge discovery, and provide updates on the latest advancements in your areas of study.

#### **How can users take advantage of EV AI results?**

The responses generated by EV AI are designed to provide users with an initial understanding of a topic and highlight key related research questions. They are not intended to replace the in-depth analysis that researchers and engineers are required to perform.

Although Engineering Village AI relies on trustworthy Compendex data content, there is a possibility of receiving inaccurate, distorted, or objectionable results. Engineering Village AI does not offer engineering design, medical, financial, legal, or safety advice. Apply caution before including its results in official documents like dissertations or research papers. Avoid entering personal, confidential, or sensitive information to protect the privacy and integrity of your research.

When using AI-generated content, it is essential to perform independent research. Additionally, Engineering Village recommends you review the guidelines established by your workplace or institution before incorporating content generated by AI.

# Functionality and features

## How do you collect user feedback and how have you used it to develop EV AI?

The global engineering community—including librarians, researchers, and students—has played a vital role in shaping EV AI since early discovery stage. Our dedicated users and thought leaders continue to help guide its evolution with their insights and expertise. We also gather valuable feedback through surveys and a built-in feedback tool directly accessible within EV AI.

## How does EV AI work?

1. You enter a natural language query, term, or phrase into EV AI.
2. Your query is processed using natural language processing (NLP) techniques to extract pertinent information from the text.
3. Your processed query is analyzed to understand the user's intent, context, and information needs. This may involve identifying keywords and relationships within the text.
4. Each word in your natural language query/phrase is mapped to a specific type of vector known as an embedding.
5. The embeddings of individual words in your query are combined to create an overall vector representation of the query. This vector encodes the semantic meaning of your entire query in a high-dimensional space.
6. Based on your query, the system identifies the most relevant documents from the vector search index. Cosine similarity is used to calculate the similarity between the query vector and vectors of the documents from the index.
7. The documents with the highest similarity scores to the query vector are retrieved.
8. Your query, the document dataset, and the specific instructions are forwarded to the large language model (LLM).
9. The large language model extracts the content according to the three prompts in the former step (query, documents, and instructions).
10. The search results are ranked based on the similarity scores of the query vector and the documents, with the most similar items ranked as containing the highest relevance to your query. The results are sorted to present the most relevant information first.
11. The search results to your original query are displayed as a summary. The corresponding document references for this summary are also accessible from the footnotes in the summary or from the 'View all references' button beneath the summary.
12. For further research on your topic of interest, you may click any of the follow-up questions (under the 'Go deeper' label) that have been provided to you.

## What makes EV AI different from other AI solutions, also ones from Elsevier?

EV AI is a tool that initiates the discovery journey within Engineering Village. It enhances, rather than replaces, the platform's powerful search and discovery capabilities, delivering most relevant search results through its unique indexing methods.

EV AI exclusively leverages Compendex abstracts and metadata, trusted by librarians and users alike, to deliver highly relevant engineering answers to practical questions that can be further explored. By addressing a common challenge—identifying the right keywords to initiate a search—EV AI simplifies the starting point for users. Building on a strong user preference for EV. We help eliminate the frustration often faced by novice, accelerating discovery through AI. This ensures users find the solutions they need without needing to turn to other resources.

# Data privacy and ethics

## How does EV AI ensure data privacy?

EV AI follows GDPR (General Data Protection Regulation) closely to ensure user privacy and limits data retention to only what is necessary. Personal user information and chat history are not stored on the Engineering Village system unless accomplished in compliance to improve the product.

Also, like all AI-enabled Elsevier solutions, EV AI is committed to 'RELX Responsible AI Principles,' which include promoting accountability, enforcing strong information management, and eliminating bias. For example, we have a dedicated agreement in place to ensure the privacy of our use of OpenAI's large language model, ChatGPT. This agreement guarantees that no data is exchanged or used to train OpenAI's public models, maintaining the confidentiality of our information.

## How do you ensure the accuracy and relevancy of EV AI results?

To maintain transparency, EV AI follows specific guidelines to ensure that the summaries are based upon accurate and pertinent Compendex content and include references. We have implemented robust measures to minimize inaccuracies or fabricated responses (hallucinations). For instance, EV AI relies exclusively on Compendex content, which has been rigorously peer-reviewed and vetted through a trusted process refined over 140 years of indexing excellence. Additionally, our prompt engineering carefully defines the instructions and scope for large language models (LLMs). This ensures that if Compendex lacks academic papers on a topic, the AI will inform users rather than generate unsupported information.

# Content sources and updates

## Why focus on documents published since 2003?

We decided on the current 20-year window to ensure that EV AI responses are grounded in recent content, aligning with the rapidly evolving and dynamic nature of the engineering field.

## How recent is the content that EV AI draws on?

The vector search engine is updated in near real-time, ensuring that the response you receive always incorporates the most up-to-date and relevant research available in the Compendex database.

## What content types does EV AI use?

EV AI draws on the metadata and abstracts of the following content types in Compendex:

- Journal articles
- Books
- Book chapters
- Conference papers
- Reports
- Reviews
- Data papers

# Access and support

## Does EV AI support languages other than English?

Summaries are generated using English abstracts, and we recommend submitting your queries in English to enhance your experience and ensure the most relevant search results. We are actively testing the quality and precision of EV AI for non-English queries and invite you to share your feedback and experiences. In the long term, we will work closely with researchers to explore how expanding the tool's language capabilities can further benefit users globally.

## When is EV AI will be available to global customers and users?

Our plan is to introduce EV AI to all customers in Q1'2025, pending further validation and feedback we receive during the trial with a handful of customers in early 2025.

# Development and future enhancements

## How is EV AI evolving?

Since EV AI's alfa launch in 2024, we have drawn on engineering community's feedback to introduce:

- Expanded summaries to provide a more detailed and comprehensive view of a topic in a single click, offering in-depth insights tailored to the specificity of engineering research.
- Enhanced user interface as multiple updates have been made to ensure the platform is more intuitive and accessible. Notably, footnotes are now embedded directly within summaries, allowing users to easily trace and verify the sources of specific information presented.
- Guidance on EV AI's confidence in its response

We are continually exploring and testing new ideas to enhance the relevance of EV AI responses, ensuring they meet the engineering community's specific needs and expectations for content accuracy and precision in search.

EV AI has been developed with a strong commitment to responsible AI principles, ensuring transparency, fairness and privacy. This will remain a core focus in the future.



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