

Navigator

Assistente AI



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Navigator AI

S.T.A. Data presents the Structural Intelligence of 3Muri Project, which takes a new approach to using AI in 3Muri Project software.

Navigator AI has been implemented to respond intuitively and immediately to all technical queries. This module helps users to navigate the software's complexities with ease.

The use of artificial intelligence in the 3Muri Project represents a significant advance in the way users interact with software.

Navigator AI, created by STA DATA, is a virtual assistant designed to support professionals. Based on the LLM model, Navigator AI's artificial intelligence enables it to interact with users using natural language.

The experts at STA DATA trained the Navigator AI model to understand users' technical requests and generate coherent responses using industry-specific language.

LLM Models

Virtual assistants:
Interact with them through a real dialogue of questions and answers.



The fine-tuning carried out by S.T.A. DATA experts provided artificial intelligence with all the basic information required for structural calculations, thus qualifying the specific adaptation of the 3Muri Project AI to structural intelligence.

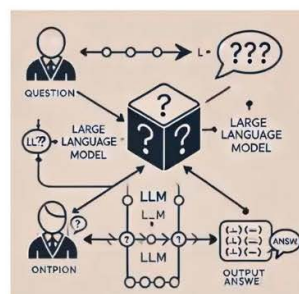
The interaction between these systems is fundamental, and with the right prompt engineering, it is possible to obtain a response that matches the quality of the question, thereby creating efficient communication with the AI model.

As shown in the figure below, prompt engineering is divided into three areas:

Prompt engineering

Prompt

- Choice of words
- Description of the context
- Structure of the prompt



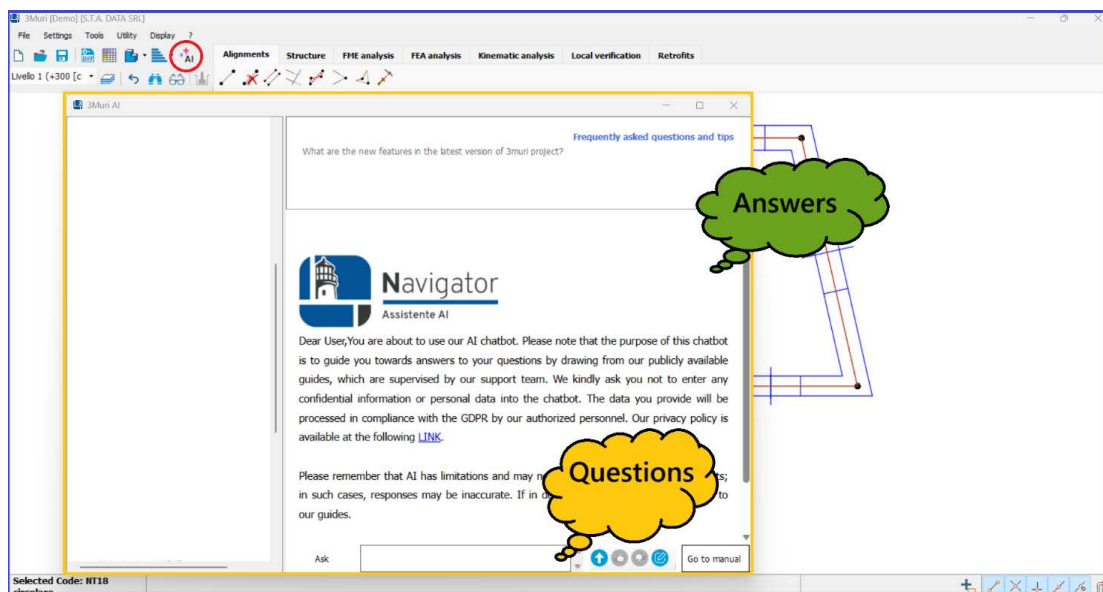
Two examples are shown: one for a simple question prompt, and one for an improved prompt in which the AI is asked to explain push-over analysis theory like an expert would:

Prompt Example

- **Simple prompt:** What is push-over analysis?
- **Improved prompt:** Explain the theory of push-over analysis in simple terms, as if you were talking to an engineering student who has just graduated and is starting out in their career.

Navigator AI is an AI-powered chatbot that has been trained and educated in civil engineering and the 3Muri Project software.

Users can engage in continuous dialogue with the AI by typing their questions, as if they were talking to experts.



Users can access constant support and receive real-time advice and solutions to help them work more efficiently.

The AI-powered chat window, which simplifies communication with the software, is opened by clicking on the AI icon (see figure on the side), at the top of the menu.



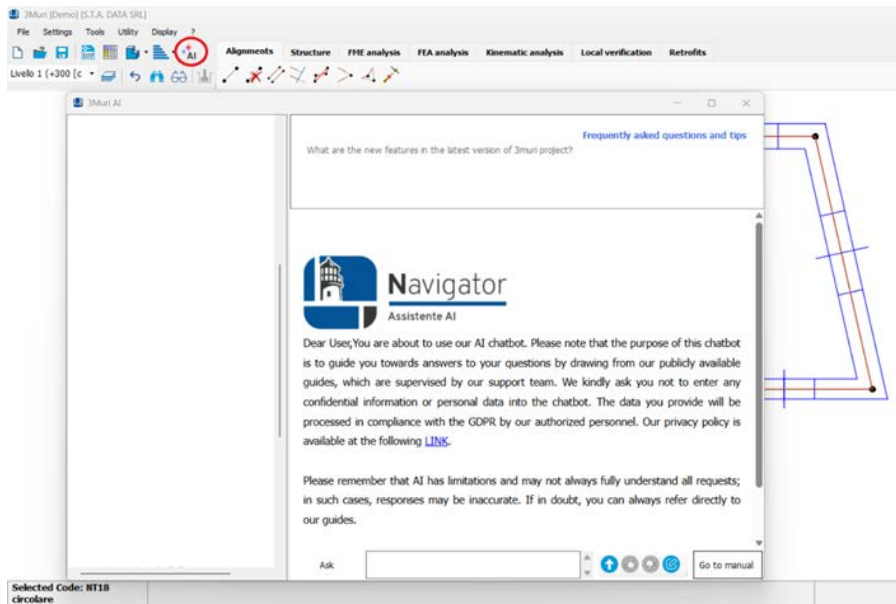


Fig. 1 3Muri Project: AI Navigator interface

Users can ask specific questions about the calculation of masonry structures and receive advice on common issues on an ongoing basis. The simple interface allows you to interact with the AI for immediate assistance, streamlining the entire design process.

Additionally, the chatbot displays some of the most frequently asked questions in the specific environment of the 3Muri Project software you are working on at the top of the window.

Clicking on a question opens a dialogue with the AI, providing an instant answer.

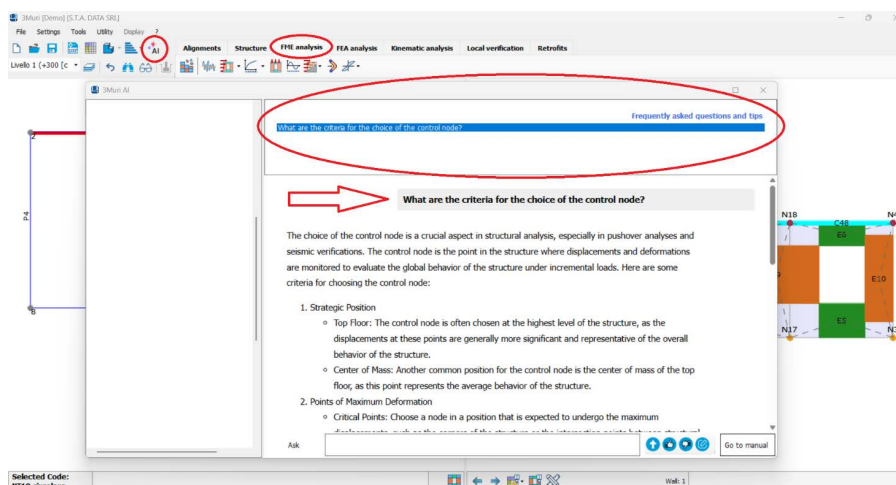


Fig. 2 A box containing frequently asked questions in the FME environment of the 3Muri Project, along with an AI response to the highlighted question.

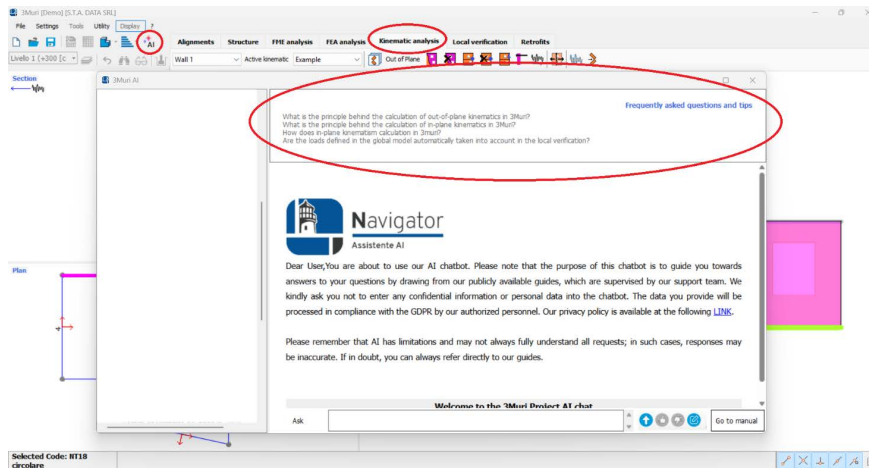


Fig.3 A box containing frequently asked questions about the Kinematic Analysis environment of the 3Mur Project.

Feedback and continuous improvement

The probabilistic nature of the AI model means that it can sometimes generate content and responses that are not entirely consistent with the provided data.

These so-called 'hallucinations' are linked to the model's probabilistic calculations and are associated with the causes listed in the following figure:

Hallucinations

The model produces content or responses that are inconsistent with the provided facts and data, or that are simply unrealistic.

Reasons:

- quality of training data
- length of input sequences
- complex tasks



While the quality of the answers provided by the virtual assistant will certainly improve over time, it is always essential to think critically and be vigilant about their quality and significance.

Techniques for reducing hallucinations are based on optimising algorithms and improving knowledge. These techniques are summarised in the following figure:

Hallucinations: How to Reduce Them

- Training Data Improvement
- Targeted and Specialised Training
- Control mechanisms
- Model Architecture Optimisation
- Estimated hallucinations: 5–15% of responses

The feedback feature integrated into the chat function of Navigator AI allows users to express their satisfaction or dissatisfaction, thereby facilitating the continuous updating of the artificial intelligence.



This mechanism enables STA DATA technicians to improve the AI agent more precisely. As a result, the system's responses become increasingly accurate and tailored to specific design requirements, thus increasing the customization of the support offered.

Further information and additional resources

Users who wish to learn more about specific features of the 3Muri Project will find the direct link to the user manual at the bottom of the chat window extremely useful. This is shown in the following figure.

This immediate access gives professionals a wide range of information resources, broadening their understanding of the software's potential while supporting continuous learning and technical development.

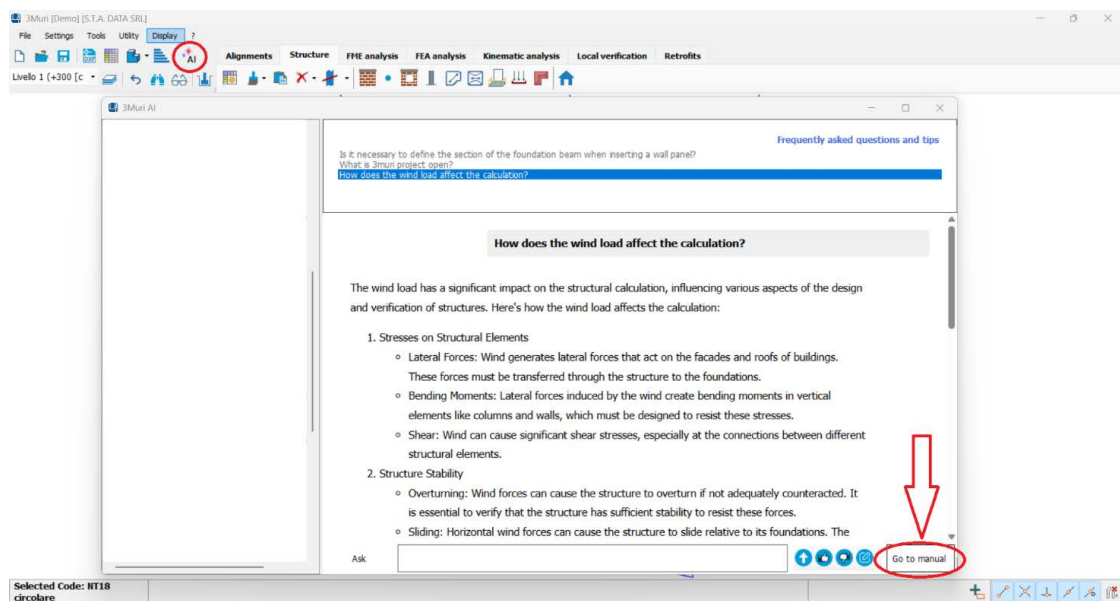


Fig. 4 Follow the link to access the 3Muri Project manual in the Navigator AI chat.

Conclusions

The Navigator AI tool offers new possibilities for structural design with the 3Muri project. Professionals can interact with the structural intelligence of the project during modelling.

The chat feature provides access to support at any time, offering real-time advice and solutions that can significantly improve the efficiency of design work.

The artificial intelligence in the 3Muri Project has been trained to interact with structural calculation professionals.

Through a process of continuous improvement, it will evolve into Structural Intelligence.

Virtual Assistant

Communicate with the AI as you would with a person

