



**GIGALA**

Engineering Design by  
Artificial Intelligence

A large, thick, black zigzag line runs diagonally across the right side of the image. Overlaid on this line is a white circuit-like path consisting of several straight segments and three circular nodes. The nodes are arranged in an upward-sloping sequence from bottom-left to top-right. The top-most node is a solid white circle, while the two nodes below it are dashed white circles.

Giorgi Tskhondia



Hello. I am Giorgi, ex subsea pipeline installation engineer, data science professional & founder at Gigala. I combine structural engineering and artificial intelligence to optimize designs for mechanical elements and components.

# Mission

- The integration of AI-driven solutions and time-proven engineering analysis methods is a powerful step forward for sustainable future.

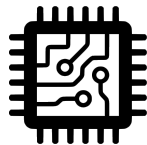


# Our offerings



## **OFFSHORE INDUSTRY**

- Subsea pipelines installation analysis software (static, dynamic 2D/3D, pipelay profile optimization, LLM agents to communicate with the software in natural language)



## **MECHANICAL ENGINEERING**

- Topology optimization by reinforcement learning, genetic algorithms and classical methods
- software for plastic deformation analysis (including electroplasticity)

# Bonus offerings

## **SOCIAL MEDIA**

- Software to generate engaging posts to share on social media

## **NATURAL LANGUAGE PROCESSING**

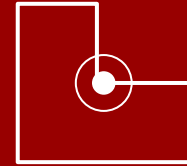
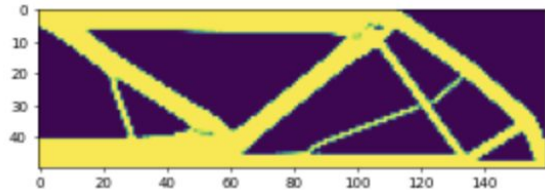
- Lightweight small size language models and chatbots

## **SOLUTIONS TO TEXTBOOKS**

- Solutions to engineering and finite element analysis textbooks implemented in a programming code



**Engineering design automation** can be formulated as Markov decision process (MDP), where an engineer provides initial geometry of a structure, sets loads and allowed actions to alter the geometry, specifies the optimization objective (e.g. minimize weight, maximize stiffness), and starts training the model. After the training, in inference stage, the engineer gets her final design. This process can be augmented by recent developments in Generative AI.



## ENGINEERING DESIGN SOFTWARE

- Mechanical elements
- Offshore structures
- Pipelay profiles
- LLM Agents to interface a software

AI DRIVEN ENGINEERING

# demo

You can find and try our solutions at

 **GitHub** [follow the link](#) or QR-code



# Technologies

Writing high quality  
**CODE**



State-of-the-art  
**TECHNOLOGIES**



No/low  
**DATA**



Verified  
**SIMULATION**

# Ready to take your design technologies to the next level? Contact us!

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