Project: AI-Based Design Optimization of Oil Rig Production Tower

This project focuses on leveraging artificial intelligence-based design optimization methods to enhance product quality, ergonomics, and economic efficiency. The primary subject of study is the production tower of an oil rig.

As part of this project, I conducted a comprehensive analysis of the strength characteristics of the most common oil rig designs. Using this data, I developed an alternative design, which serves as a foundation for testing the hypothesis that a topologically optimized design offers significant advantages over traditional designs.

Key aspects

Strength Analysis: Detailed examination of the structural integrity and stress distribution of existing oil rig production towers.

AI-Based Design Optimization: Implementation of cutting-edge AI algorithms to propose a new design that improves upon traditional structures in terms of strength, efficiency, and material usage.

Hypothesis Testing: Comparative analysis to validate the hypothesis that topologically optimized designs provide superior performance and cost-effectiveness.

This project demonstrates my commitment to innovative engineering solutions and my ability to apply advanced technologies to real-world challenges in the energy sector.