

# Tensor networks in machine learning

This project will introduce the basics of tensor networks and provide an opportunity to apply them to machine learning models through hands-on coding.

Tensor networks in machine learning is a new and exciting area of research with significant applications for the future of science, technology, and humanity. For example, tensor networks can greatly enhance the efficiency of large language models, such as ChatGPT, by reducing the computational complexity of training these models, making them more accessible and scalable. Additionally, in climate change applications, tensor networks are well-suited to model complex environmental systems, enabling more accurate predictions and simulations with lower resource demands.

Beyond machine learning, tensor networks also have diverse reach in quantum computing, fluid dynamics, condensed matter, quantum many-body physics, data compression, signal processing, and many more, further demonstrating their wide spectrum of applications.

## Group

CQTA

## Project Category

B5. Computing

## Special Qualifications

Programming knowledge in Python, Julia, or other.

Linear algebra.

Machine learning.

## DESY Site

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