

PhD Positions in Intelligent Use of Data for Process Optimization, Norwegian University of Science and Technology, The Department of Chemical Engineering, Norway.

Description

At the Department of Chemical Engineering at NTNU there are two vacant PhD positions in the field of Intelligent use of data for process optimization using machine learning.

The project is financed by the Norwegian research council through the IKTPLUSS program. The PhD students will be integrated in the Process Systems Engineering Group at NTNU which has about 30 Faculty, PhD students and Master students.

The project aim is to utilize process data to develop machine-learning based models (also known as digital-twins), that can be used for developing optimization tools. To address the computational robustness issues of solving optimization problems, we also aim to approximate computationally intensive optimization problems using machine-learning algorithms.

Several companies are joining the project, including AkerBP, Kongsberg Digital and Perstorp (Sweden). Applications can be towards oil and gas industries, chemical production, human waste (sludge) management, fish farming and development of generic tools for industrial use.

Position 1. Grey-box machine-learning models (feature engineering)

Position 2. Surrogate optimizers for computationally robust and fast online optimization.