Master project (5 ECTS)

Working title

Applications of physics informed neural networks in rock mechanics – a comprehensive review

Project objectives

Physics-Informed Neural Networks (PINNs) are a class of machine learning models that combine the power of neural networks with the principles of physics to solve complex scientific and engineering problems. These models aim to leverage data-driven approaches for predictions while incorporating the underlying physical laws governing the system of interest. PINNs have gained attention in various scientific and engineering disciplines. This Mater project's aim is to review possible applications of PINNs in rock mechanics. This should comprise a combination of literature serch about what has been done and you own ideas for possible applications.

Student has enthusiasm for

Digitalisation, (physics informed) machine learning, geotechnical data

Requirements on student

Attention to detail, reliability, search skills

Start (earliest / latest)

October 2024

Project term (min. / max.)

3 / 6 weeks full-time

Coop. with external institution

no

Contact person

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