ALERT Geomaterials Doctoral School 2023

Machine Learning (ML) in Geomechanics

Organized by Ioannis Stefanou and Felix Darve

Thursday 28/09/2023

8:30-9:00 Introduction to the school (Felix Darve)

9:00-10:00 Overview of Machine Learning (Ioannis Stefanou)

10:00-10:30 Coffee Break

10:30-12:00 Introduction to regression methods (Filippo Masi)

12:00-13:30 Lunch

13:30-15:00 Hands-on introduction to regression methods (Filippo Masi)

15:00-15:30 Coffee Break

15:30-16:30 Unsupervised topological learning (Noël Jakse)

16:30-17:45 Introduction to classification methods (Noël Jakse)

17:45-19:00 "Data-Driven" modeling of geomaterials (Konstantinos Karapiperis)

Friday 29/09/2023

9:00-10:00 Introduction to Artificial Neural Networks (Filippo Gatti)

10:00-10:30 Coffee Break

10:30-12:30 Hands-on introduction to Artificial Neural Networks I (Filippo Gatti)

12:30-14:00 Lunch

14:00-15:00 Hands-on introduction to Artificial Neural Networks II (Filippo Gatti)

15:00-15:30 Coffee Break

15:30-17:30 Hands-on Physics and Thermodynamics based Artificial Neural Networks (Filippo Masi & Ioannis Stefanou)

15:30-17:30 AlphaGo

Saturday 30/09/2023

8:30-10:00 Introduction to Reinforcement learning (Alexandros Stathas, Diego Gutierrez-Oribio & Ioannis Stefanou)

10:00-10:30 Coffee Break

10:30-12:00 Hands-on Introduction to Reinforcement learning (Diego Gutierrez-Oribio, Alexandros Stathas & Ioannis Stefanou)

12:00-12:30 Closure (Felix Darve & Ioannis Stefanou)