



**ChEESE**

05 - 07 NOVEMBER, 2024

TRAINING

Delegació CSIC Catalunya, Carrer de les Egipcíaques, 15, Ciutat Vella, Barcelona, Spain.



# Artificial Intelligence and Machine Learning for Geosciences

## DAY 1 - 05 NOVEMBER

SESSION 1		
10:00-10:10	Introduction - practical information	Alexandre Fournier Aerton Guimarães
10:10-11:40	Machine learning: nonlinear regression for turbidity sensor calibration (Scikit-Learn, N1)	Léonard Seydoux + supporting cast (GM, AF, HF)
11:40-12:00	Coffee break	
12:00-13:30	Machine learning: nonlinear regression for turbidity sensor calibration (Scikit-Learn, N1)	Léonard Seydoux + supporting cast (GM, AF, HF)
13:30-14:30	Lunch Break	
SESSION 2		
14:30-16:00	Machine learning: classification of Lidar points cloud (Scikit-Learn, N3)	Léonard Seydoux + supporting cast (GM, AF, HF)
16:00-16:15	Coffee break	
16:15-17:50	Machine learning: classification of Lidar points cloud (Scikit-Learn, N3)	Léonard Seydoux + supporting cast (GM, AF, HF)
20:00-22:00	Social Dinner* <i>Each participant is responsible for covering their own costs.</i>	TBD



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## DAY 2 - 06 NOVEMBER

SESSION 1		
10:00-11:30	Deep learning: first steps with MNIST (Pytorch)	Léonard Seydoux + supporting cast (GM, AF, HF)
11:30-11:50	Coffee break	
11:50-13:30	Deep learning: first steps with MNIST (Pytorch)	Léonard Seydoux + supporting cast (GM, AF, HF)
13:30-14:30	Lunch Break	
SESSION 2		
14:30-16:00	Deep learning: transfer learning with PhaseNet (Pytorch)	Léonard Seydoux + supporting cast (GM, AF, HF)
16:00-16:15	Coffee break	
16:15-17:50	Deep learning: transfer learning with PhaseNet (Pytorch)	Léonard Seydoux + supporting cast (GM, AF, HF)





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# Artificial Intelligence and Machine Learning for Geosciences

## DAY 3 - 07 NOVEMBER

SESSION 1		
10:00-11:30	Differentiable physics: Burgers equation (JAX)	Hugo Frezat + supporting cast (GM, AF, LS)
11:30-11:50	Coffee break	
11:50-13:30	Differentiable physics: Burgers equation (JAX)	Hugo Frezat + supporting cast (GM, AF, LS)
13:30-14:30	Lunch Break	
SESSION 2		
14:30-16:00	Open class, work on own data, revisit session	Alexandre Fournier Geneviève Moguilny Hugo Frezat Léonard Seydoux
16:00-16:20	Coffee break	
16:20-18:00	Open class, work on own data, revisit session	Alexandre Fournier Geneviève Moguilny Hugo Frezat Léonard Seydoux