

Pre-conference workshop – AGILE 2020 Chania, Monday 15 June 2020

<https://agile-online.org/conference-2020>

1. Workshop name/title (and acronym is applicable)

Artificial Intelligence for spatial data (AI4SD)

2. Description of the workshop by listing topic(s), objective(s) and planned outcome(s)

2.1 Topic(s)

Spatial data science, Deep Learning

2.2 Objective(s)

Provide participants with hands-on experience on AI and GIS integration

2.3 Planned outcome(s)

Provide participants with theory and practical experience in spatial data science

3. Abstract

Spatial data science and artificial intelligence have gained a very prominent role throughout many fields of research. This is fueled by more freely available data such as satellite data but also other spatial datasets from sensors (e.g. climate data) and administrations (e.g. infrastructure). The proposed workshop aims at giving an overview on advanced spatial and temporal statistics, predictive mapping and deep-learning integration into a GIS environment. Hands-on experience will be provided on environmental datasets to highlight the potential of innovative methods to support marine conservation science. Possible applications include hazard prediction, habitat modelling, object detection, image classification and many more.

We focus on introducing methods to the participants of the workshop that can be transferred to many other research questions and resource management applications. The workshop will follow the principle of data science to go from exploratory data analysis and visualization to more complex methods of spatial statistics in ArcGIS Pro and finally machine-learning/deep-learning integration using Jupyter Notebooks and, possibly, R.

4. Resources

System requirements to fully participate in all exercises: ArcGIS Pro, Spatial analyst extension, image analyst extension, Jupyter Notebooks, R, Python API, R-ArcGIS bridge.

Free software trial is available in: <https://www.esri.com/en-us/arcgis/products/arcgis-pro/trial>

Please bring your own laptop.