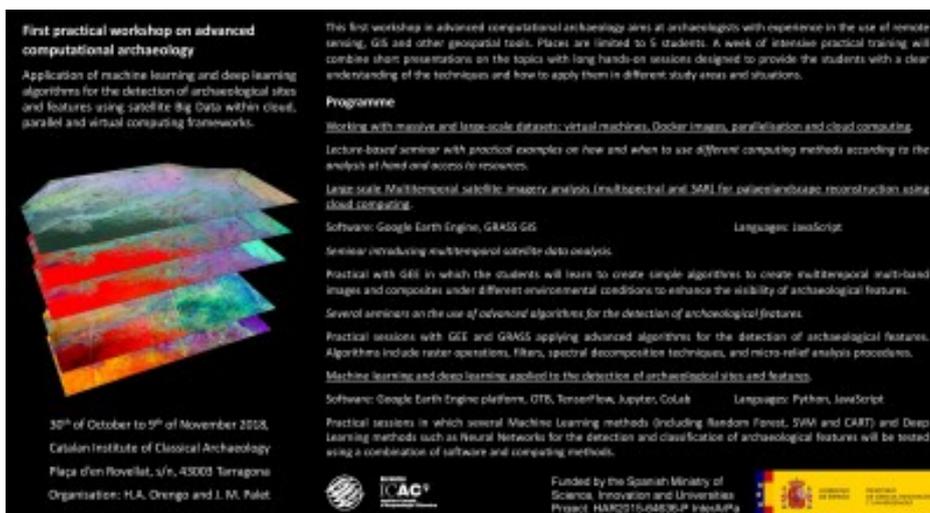


First Practical Workshop on Advanced Computational Archaeology

Hèctor A. Orengo y Josep Maria Palet, miembros del **Grupo de Investigación en Arqueología del Paisaje (ICAC)** organizan, del 30 de octubre al 9 de noviembre, unas sesiones de trabajo sobre computación arqueológica avanzada. Es una de las actividades de difusión previstas en el proyecto **InterArPa**, financiado por el **programa I+D**, MINECO (HAR2015-64636-P).

La primera edición del Workshop on Advanced Computational Archaeology se dirige a arqueólogos y arqueólogas con experiencia en el uso de teledetección, SIG y otras **herramientas geoespaciales**. Un entrenamiento práctico intensivo que combina breves **presentaciones** sobre temas específicos con largas **sesiones prácticas** que permitirán profundizar en las técnicas de computación y comprender su aplicación en distintas áreas y situaciones de estudio.



First practical workshop on advanced computational archaeology

Application of machine learning and deep learning algorithms for the detection of archaeological sites and features using satellite Big Data within cloud, parallel and virtual computing frameworks.

This first workshop in advanced computational archaeology aims at archaeologists with experience in the use of remote sensing, GIS and other geospatial tools. Places are limited to 5 students. A week of intensive practical training will combine short presentations on the topics with long hands-on sessions designed to provide the students with a clear understanding of the techniques and how to apply them in different study areas and situations.

Programme

Working with massive and large-scale datasets: virtual machines, Docker images, parallelisation and cloud computing.
Lecture-based seminar with practical examples on how and when to use different computing methods according to the analysis of field and aerial photography.

Large-scale, Multitemporal, satellite imagery analysis (multispectral and SAR) for paleolandscapes reconstruction using cloud computing.

Software: Google Earth Engine, GRASS GIS
Languages: JavaScript

Research introducing multitemporal satellite data analysis.

Practical with GEE in which the students will learn to create simple algorithms to create multitemporal multi-band images and composites under different environmental conditions to enhance the visibility of archaeological features.

Several seminars on the use of advanced algorithms for the detection of archaeological features.

Practical sessions with GEE and GRASS applying advanced algorithms for the detection of archaeological features. Algorithms include raster operators, filters, spectral decomposition techniques, and micro-relief analysis procedures.

Machine learning and deep learning applied to the detection of archaeological sites and features.

Software: Google Earth Engine platform, QGIS, TensorFlow, Apache, Colab
Languages: Python, JavaScript

Practical sessions in which several Machine Learning methods (including Random Forest, SVM and CART) and Deep Learning methods such as Neural Networks for the detection and classification of archaeological features will be tested using a combination of software and computing methods.

30th of October to 9th of November 2018,
Catalan Institute of Classical Archaeology
Plaça d'en Rovellat, s/n, 43003 Tarragona
Organisation: H.A. Orengo and J. M. Palet

Funded by the Spanish Ministry of Science, Innovation and Universities
Project HAR2015-64636-P InterArPa

Concretament, en les sessions pràctiques se testaran diferents mètodes de **Machine Learning** (Random Forest, SVM, CART...) i de **Deep Learning**, com les xarxes neuronals per a la detecció i classificació de característiques arqueològiques.

