

NoRSC '19

Nordic Remote Sensing Conference 2019  
17-19 September

DATA ACQUISITION, ALGORITHMS AND APPLICATIONS

NASA/Landsat 8 (OLI)

The **Nordic Remote Sensing Conference 2019** (NoRSC'19) will bring together researchers in the broad field of Remote Sensing in, but not restricted to, the Nordic and Arctic countries. NoRSC'19 will provide a transdisciplinary platform for researchers in both academia and industry, involved in the acquisition, analysis and applications of remotely sensed data to share their knowledge for the advancement of the field. NoRSC'19 seeks to strengthen the cooperation between institutes and research groups in Earth Observation, and will serve as a forum for networking to promote collaborative projects. Topics of presentations include the **acquisition** of data from satellite, airborne, terrestrial or under-water platforms, development of **algorithms** for data processing and analysis, and the use of derived metrics in **applications** across disciplines.

### Pre-conference Workshops

**Date:** 17 September 2019

**Time:** 13:00 – 17:00

**Venue:**

Aarhus Institute of Advanced Studies (AIAS)  
Aarhus University, Høegh-Guldbergs Gade 6B  
8000 Aarhus C, Denmark

**Registration Fee:**

Early bird (by 28 June 2019): DKK 750

Standard (by 3 September 2019): DKK 850

**For registration:**

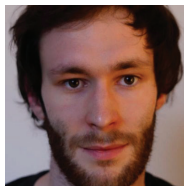
<https://events.au.dk/NoRSC>

**For more information:**

<http://aias.au.dk/events/aias-conference-nordic-remote-sensing-2019-norsc19/>

### WORKSHOP 1

## Deep Learning for Remote Sensing



**Sylvain Lobry & Diego Marcos**

Laboratory of Geo-information Science and Remote Sensing, Wageningen University and Research, Netherlands



**Ahmed Samy Nassar**

IRISA, University of Southern Brittany, France & EcoVision Lab, ETH, Zurich, Switzerland

In the past few years, deep learning has become an effective way to process remote sensing data. In this workshop, we aim at reviewing both theoretical and practical notions of deep learning, with the objective of allowing the participants to incorporate this tool in their own research. We will start this workshop by reviewing the fundamental notions that are required to build and train a deep neural network and then look at two applications on remote sensing data: semantic segmentation and object detection. The rest of the workshop will be dedicated to build hands-on experience on these two problems. We will learn how to implement simple convolutional neural networks for semantic segmentation and object detection, how to train them and how to use them to predict on new data. Finally, we will conclude by outlining some use cases of deep learning for remote sensing data and a reflection of the adequacy of these methods in comparison with other machine learning tools.

### WORKSHOP 2

## Bridging Earth Observation data and Machine Learning in Python



**Matej Batič**, Sinergise Ltd., Ljubljana, Slovenia



**Devis Peressutti**, Sinergise Ltd., Ljubljana, Slovenia

Extracting valuable information from satellite imagery is challenging primarily due to large amounts of data. On top of that there is a big lack of techniques allowing for automatic detection and extraction of complex patterns in such spatiotemporal data. eo-learn is a collection of open source Python packages that have been developed to seamlessly access and process spatio-temporal satellite imagery in a timely and automatic manner. The eo-learn library acts as a bridge between the Earth Observation (EO)/Remote Sensing (RS) field and the Python ecosystem for data science and machine learning. Join us to learn how to leverage eo-learn to obtain meaningful information from satellite data with just a few lines of Python code.

#### Prerequisites

WORKSHOP 1: Presenters will live-program during the workshop.

Basic knowledge of Python, MATLAB or R would be helpful.

WORKSHOP 2: Participants are requested to bring their own laptops.

Basic knowledge of Python is required.



# WORKSHOPS

# PRE-CONFERENCE