

YILI YANG

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RESEARCH INTEREST

I am a Data Scientist at the Woodwell Climate Research Center focusing on solving geoscientific challenges using state-of-the-art data science, especially deep learning and computer vision. I am currently leading a project for mapping retrogressive thaw slumps (RTS) in the Arctic using Maxar high-resolution imagery, the Arctic DEM and Sentinel-2. In a broader sense, I am interested in remote sensing image processing, satellite data fusion and semantic segmentation model training using deep neural networks.

EDUCATION

University of Edinburgh, UK

PhD in Petrophysics

Oct 2016 - Apr 2021

MSc (Research) in Geology, Distinction

August 2015 - August 2016

BSc Geology

Sep 2011 - May 2015

WORK EXPERIENCE

Data Scientist, Woodwell Climate Research Center, MA, US (remote)

Jan 2022 -

RTS Mapping Project Lead

The long-term goal of this project is to produce a pan-Arctic RTS map for understanding the importance of abrupt thaw on Arctic landscapes and carbon feedbacks. By using state-of-the-art deep learning approaches, combined with satellite remote sensing imagery, we aim to train a deep learning model that can detect and segment RTS features across different regions in the Arctic.

This project is also in collaboration with parallel projects such as wildfire detection and waterbody detection within a large research project called Permafrost Pathways. Our project is also closely connected with the RTSinTrain project and the Permafrost Discovery Gateway project.

Workshop Organizer

Organised an introductory-level machine-learning workshop that intends to provide researchers with just-enough knowledge to start their own ML project. The four-week workshop includes machine learning concepts, principles and practical skills.

Data Science Fellow, Faculty.ai, London, UK

Oct 2021 - Dec 2021

Fellowship on Machine learning and artificial intelligence

RELATED WORKS

Yang Y, Rogers B M, Fiske G, et al. Mapping retrogressive thaw slumps using deep neural networks[J]. Remote Sensing of Environment, 2023, 288: 113495.

Singh, Ridhima, Yili Yang, and Brendan M. Rogers. "Mapping Retrogressive Thaw Sumps (RTS) Using Transformer-Based Neural Networks." Fall Meeting 2022. AGU, 2022.

Potter S, Burrell A, Talucci A, et al. Mapping Alaskan and Canadian Wildfires using Convolutional Neural Networks[C]//Fall Meeting 2022. AGU, 2022.

Mullen A, Watts J D, Rogers B M, ... Yang Y et al. Using High-resolution Satellite Imagery and Deep Learning to Track Dynamic Seasonality in Small Water Bodies[J]. Geophysical Research Letters, 2023, Accepted