Zheng Wang, PhD

Work History

2023.10 – present

Senior Data Scientist

Catalyst Earth (PCI Geomatics Inc.), Markham, On, Canada

2022.07 – 2023.09

Data Scientist II

3vGeomatics, Vancouver, BC, Canada

- Led the full lifecycle of deep learning projects, including self-supervised learning for InSAR phase restoration (oral presentation at the IGARSS 2023 Conference) and SAR image despeckling.
- Developed general SAR amplitude and coherence change detection products from concept to roll out.
- Co-supervised three PhD projects that applied semantic segmentation to waterbody detection and phase unwrapping, and GAN to data simulation.

2019.07 – 2022.07

Data Scientist

3vGeomatics, Vancouver, BC, Canada

- Designed an automatic quality control pipeline and developed ~50 anomaly detection metrics to inspect critical operational InSAR data analysis steps.
- Streamlined waterbody data labeling with Google Earth Engine for replacing a traditional labeling pipeline, reducing time cost by over 99% (from one week to five minutes for a site of 3000 km^2).
- Developed tools to characterize seasonal displacement signals in the Artic and created the first industry InSAR permafrost product templates.
- Developed a global snow coverage detection tool by leveraging optical MODIS imagery for radar data selection, reducing the company's commercial data cost up to 20%.

Education

2015 – 2019 PhD: Earth Science, Newcastle University, UK

- Thesis: Ground-based synthetic aperture radar interferometry for deformation monitoring.
- The Best Doctoral Thesis of 2019 awarded by the UK's Remote Sensing and Photogrammetry Society.

2008 – 2015 MEng & BEng: Photogrammetry and Remote Sensing, Wuhan University, China

Contact

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Website

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Research

SAR Interferometry for Deformation Monitoring

Change Detection for Wildfire and Flood Mapping

Expertise/Skills

Remote Sensing (Optical, SAR)

Photogrammetry and Lidar

Computer Vision

Deep/Machine Learning

PyTorch, TensorFlow

Google Earth Engine

Python, C/C++, Matlab

Git, Jenkins, Linux

GPU, Distributed Data Parallel

Automation and Scaling of Applications

Anomaly Detection