CDL | Workshop on Complex-Valued Deep Learning and SARFish Challenge

@WACV 2024

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Important dates

Submissions due:
28th October, 2023

Notification to authors:
9th November, 2023

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The governments of Australia, the United Kingdom, and the United States are pleased to announce a workshop on complex-valued deep learning as part of the IEEE/CVF Winter Conference on Applications of Computer Vision (WACV 2024). The workshop will promote research and discussion on detection and classification making use of complex-valued networks, multi-modal representation learning methods and natural spacing processing techniques.

Topics include, but are not limited to:

- Complex-valued deep networks
- Quantum-inspired machine learning methods for complex data
- Scene understanding and semantic labelling in global-scale marine environments using GRD-SLC SAR
- Feature representation, indexing and analysis of SAR images
- Multi-scale methods for detection of small maritime targets in SAR images
- Representation learning for GRD-SLC SAR
- Natural spacing processing for GRD-SLC SAR data
- Open-set recognition and detection for SAR
- Large-scale object detection and recognition.
- Semi-, weakly-, self-supervised learning for complex-valued data
- Few-shot algorithms for SAR and other complex-valued data modalities
- Data-efficient neural architectures for SAR
- Transfer learning and domain adaptation in complex-valued networks

SARFish Challenge:

The workshop will also host the SARFish challenge. SARFish is a free and open large-scale complex-valued SAR dataset for the identification of vessels involved in illegal, unregulated and unreported fishing. The dataset is comprised of 19,224 labelled maritime objects in 50 Sentinel-1 GRD products and 50 corresponding Sentinel-1 SLC scenes, each comprising of 3 deburst swathes. Both VH and VV polarisations are provided for all images. The SARFish labels and the GRD data have been aligned to the coordinate system of the SLC data, whereby, due to the imaging mechanism of SAR, the complex data has non-square pixels. The challenge has three tracks:

Track 1: Maritime Object Detection

Track 2: Vessel Measuring

Track 3: Vessel Classification

Papers presented at the workshop will be published as part of the WACV Workshops Proceedings, hence refer to the WACV author guidelines. All submissions will be handled electronically via CMT (https://cmt3.research.microsoft.com/CDL2024). Papers are limited to eight pages, including figures and tables, in the WACV style. Additional pages containing only cited references are allowed. Papers that are not properly anonymized, or do not use the template, or have more than eight pages (excluding references) will be rejected without review.

Further information: https://www.dairnet.com.au/events/workshop-on-complex-valued-deep-learning-and-sarfish-challenge/