

Compressive sensing for clutter suppression in sonar signals



 Isolate and estimate ridge, interference components
 Mitigate sidelobe clutter

Deep learning for reconstruction of data from sparse measurements



Contact:

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Capabilities:

ARiA maintains broad expertise in the entire processing chain of antisubmarine warfare (ASW) and mine countermeasures (MCM) sonar systems from processing of the sensor-array data, to signal processing for match filtering, normalization, and detection, to information processing for classification and tracking. We both work to improve the performance of multiple fielded tactical systems and develop novel new approaches including compressive sensing and topological signal processing.

Projects:

- Distributed sensor fusion for tactical ASW systems to enhance detection and minimize clutter
- Sparse processing for predicting transmission loss (TL) from small numbers of tactical measurements made by a distributed sensor field used to predict sonar-system performance
- Topological signal processing for classification of MCM sonar echoes
- Sparse processing for tactical ASW systems to enhance detection and minimize clutter
- Compressive and model-based beamforming for tactical ASW systems to enhance detection and minimize clutter
- Adaptive matched-filtering, detection and normalization for tactical ASW systems to enhance detection and minimize clutter

Customers:

- Naval Air Systems Command (NAVAIR)
 Naval Air Warfare Center Aircraft Division (NAWCAD)
- Naval Sea Systems Command (NAVSEA)