

AIAD #10850

Research Opportunity (Faculty, Cadet, both) Both

ORGANIZATION/PROJECT SPONSOR

Organization: Army Research Laboratory

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Location of Sponsoring Directorate or Division: CISD/BED (Adelphi, MD)

PROJECT

Title: Image Analysis for Target Detection via Integrated Distributed Virtual Research Network (IDRVN) and High Performance Computing (HPC)

Description:

Applications of anomaly detection can be found in a variety of areas such as medicine, computer security, communications, and target detection. Applications such as target detection take advantage of the existence of anomalies as a technique to identify objects and areas that are important. In general, anomalies are seen, as data points whose individual attributes are not consistent with the attributes of its environment.

The detection of anomalies uses techniques that enable an individual to locate targets whose characteristics are distinct from their surroundings without *a priori* knowledge of device type or location. The objects that deviate from their backgrounds are then considered by the observer to be anomalous. The purpose of this research is to determine image analysis techniques to highlight salient information in images and determine a method for characterizing key anomalies within images. This research will utilize various tools including the IDVRN and visualization software through the HPC.

ARL/Army Benefit: Development of techniques that will enhance target detection for the Warfighter.

Background Required: Engineering or Computer Science with programming experience to include but not limited to C, C++, JAVA, or Matlab

Security clearance required: Secret or above

Capacity: 1 Faculty/ 1 Cadet

Duration: maximum number of weeks allowed

Block Preference: There are no bad timeframes; all times will work.