MANIFOLD LEARNING FOR MULTI-SENSOR, MULTI-RESOLUTION FUSION WITH IMPRECISE DATA

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INTRODUCTION

During this project, manifold learning methodologies will be explored for use in multi-sensor target detection, target classification, and information fusion given uncertain and imprecise groundtruth. These methods will be developed as universal approaches for fusion and will be evaluated on a variety of sensor modalities, including: mid-wave IR, visible, hyper-spectral and multi-spectral imagery, as well as LiDaR, ground-penetrating radar and electromagnetic induction sensors. The aim of this project is to develop fusion methods which can address mis-registration between sensor sources as well as uncertainty and imprecision in training data groundtruth, while demonstrating robustness towards outlying and adversarial data points.

Multi-sensor fusion methods aim to amalgamate data collected from multiple information sources to reduce uncertainty and provide a greater level of understanding than can be obtained from the modalities individually **CITE**. MIL is important because

How this will expand knowledge

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