1. Introduction:

The process of detecting landmines in soil can be a challenge even with its seemingly rudimentary principle. Ground Penetrating Radar (GPR) and Electromagnetic Induction (EMI) sensors are deployed onto handheld or vehicular systems to sense what is beneath the soil. Landmines vary in size, metal content, depth, and orientation; invoking a need to develop a dictionary of landmine types for detection. Another challenge is the effect of differing soil conditions, even at the same local region. Differences in vegetation and moisture can change how the soil can be modeled. Some soil has magnetic properties, making it more difficult to detect metal objects in the soil. The proposed method in this paper is designed to address these varying condition properties by learning multiple variations of target signatures within the target class. This method is an extension to the MI-ACE algorithm that was worked on by Dr. Alina Zare, Dr. Changzhe Jiao, and Dr. Taylor Glenn.

1. Related Methods:
2. Learning Multiple Targets using MIL:
3. Experimental Results:
4. Conclusion: