Utah Models for Event Discrimination to the Broader United States with Semi-Supervised Learning

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This work expands on a new method, called event-based training (EBT) which is primarily a tool to leverage large datasets with little or no ground truth, to build event discrimination models across the continental United States. We include data from the transportable array and other regional catalogs as well as including a null criteria to enable a model to abstain from decision making in the absence of sufficient evidence. This work also extends Bayesian deep learning to assess the interplay between decision abstention and uncertainty assignments for use by analysts. This research benchmarks how appropriate EBT is for local to regional scale event characterization in the absence of abundant ground truth broadly.

Promotional text

This work represents innovations in training data hungry discrimination models that would otherwise be limited by lack of ground truth. We also advance the security and safety of their use by integrating uncertainty, outlier detection, and decision abstention.

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Oral preference format

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