Observation: Existing SOTA few-shot learning systems learn only from the labelled support set without leveraging the unlabelled validation (target) sets.

Question: How can we extract information from unlabelled target sets, to enhance few-shot learning systems?

Problem: No supervised labels means that we can’t use discriminative training to learn.

Solution: Meta-learn an unsupervised loss function that can extract such information, targeted towards performing better on a task, called Self-Critique and Adapt (SCA).

Demonstration: State-of-the-art, currently best-in-class few-shot learning results.

Unsupervised information in the target set can be used to disambiguate the semantics of the task classes.

Table: Ablation Studies on the conditioning of the information flow. The combination of the task-embedding and the predictions appear to produce the best results.

Table: Test accuracy comparison with legacy and other SOTA methods. Our methods produce the top performance across the board.