Boosting Self-Supervised Learning via Knowledge Transfer

Seungmin Lee (profile2697@gmail.com; 2013-11420), Dept. of Computer Science and Engineering, Seoul National University

1. Motivation

Self-supervised learning (SSL) aims to learn meaningful representations from pretext tasks for boosting the performance of target tasks. The pretext tasks do not require hand-made labels. Otherwise, the target tasks are tasks that we really care about, and we typically assume the target tasks do not have enough labels. Traditional SSL methods transfer the knowledge learned from the pretext task using fine-tuning. Despite using fine-tuning is a simple and effective way, the transfer methodology limits the design choices of network architectures since a pretext network and target network should have the same structure for fine-tuning. In this setting, the model should have a simple structure because the target task does not have enough labels. For the same reason, the difficulty of the pretext task is also limited because it should be solvable using the simple model. The proposed method tries to decouple the architectures of pretext tasks and target tasks using distillation.