Self supervised Learning

*Pre-text Task: Pre-training model
observed data, Pretext task
obtain labels from the data itself by using a 'semi-automatic' process

→ knowledge transfer →

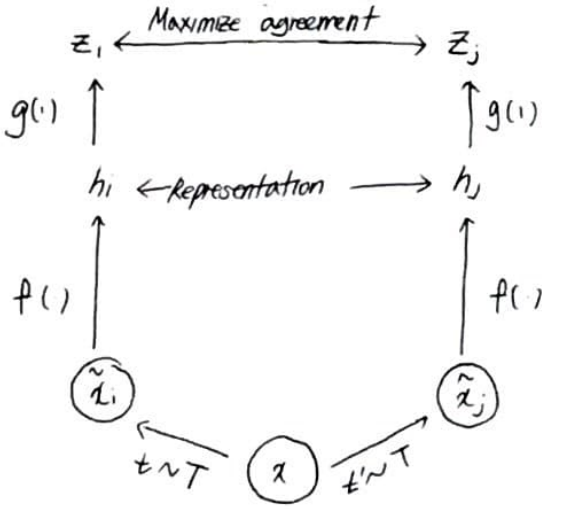
Target Model
Hidden data, target task.
Train network with predicting the 'semi-automatically' obtained labels

↳ Evaluation Protocol
: evaluate the pre-trained representations through fine-tuning and transfer-learning

- fine-tuning : fine-tune the pre-trained model with an additional task-specific model
- transfer-learning : train a linear layer for downstream tasks

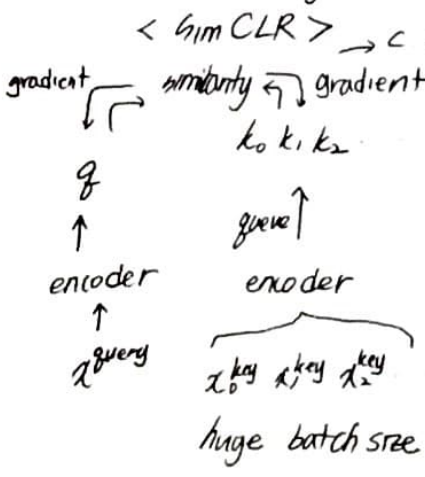
* Recent Research trends: Contrastive Learning

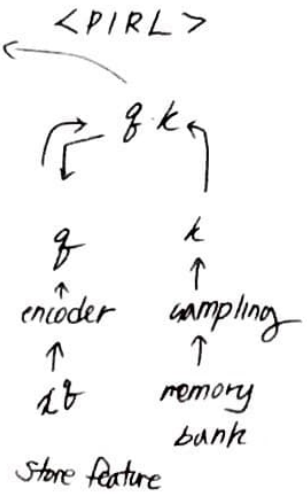
↳ Instance 간 유사도를 학습
잘 추출된 특징값은 instance들 간의 유사도 정보 포함

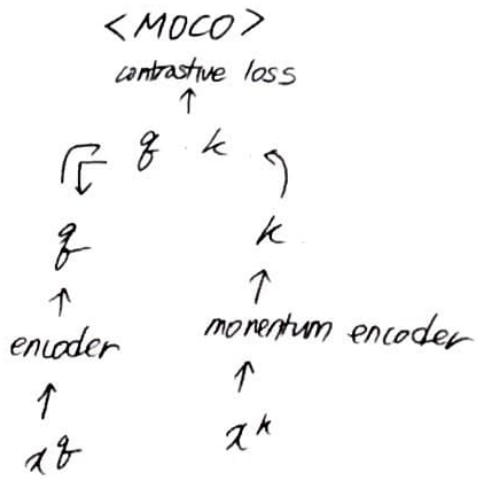


positive pair 의 feature representation은 가깝고
negative pair 의 feature representation은 멀어지도록

but unstable training due to moving targets → Sol) PIRL, SimCLR, MoCo

<SimCLR> (negative를 증폭)


<PIRL>


<MOCO> (use network)


* Recent Research trends : Bootstrapping

: Network 구조나 clustering 개념을 도입해 주어진 입력이미지에 대한 정보를 추출하는 방식

Deep Cluster

SeLA

PICA