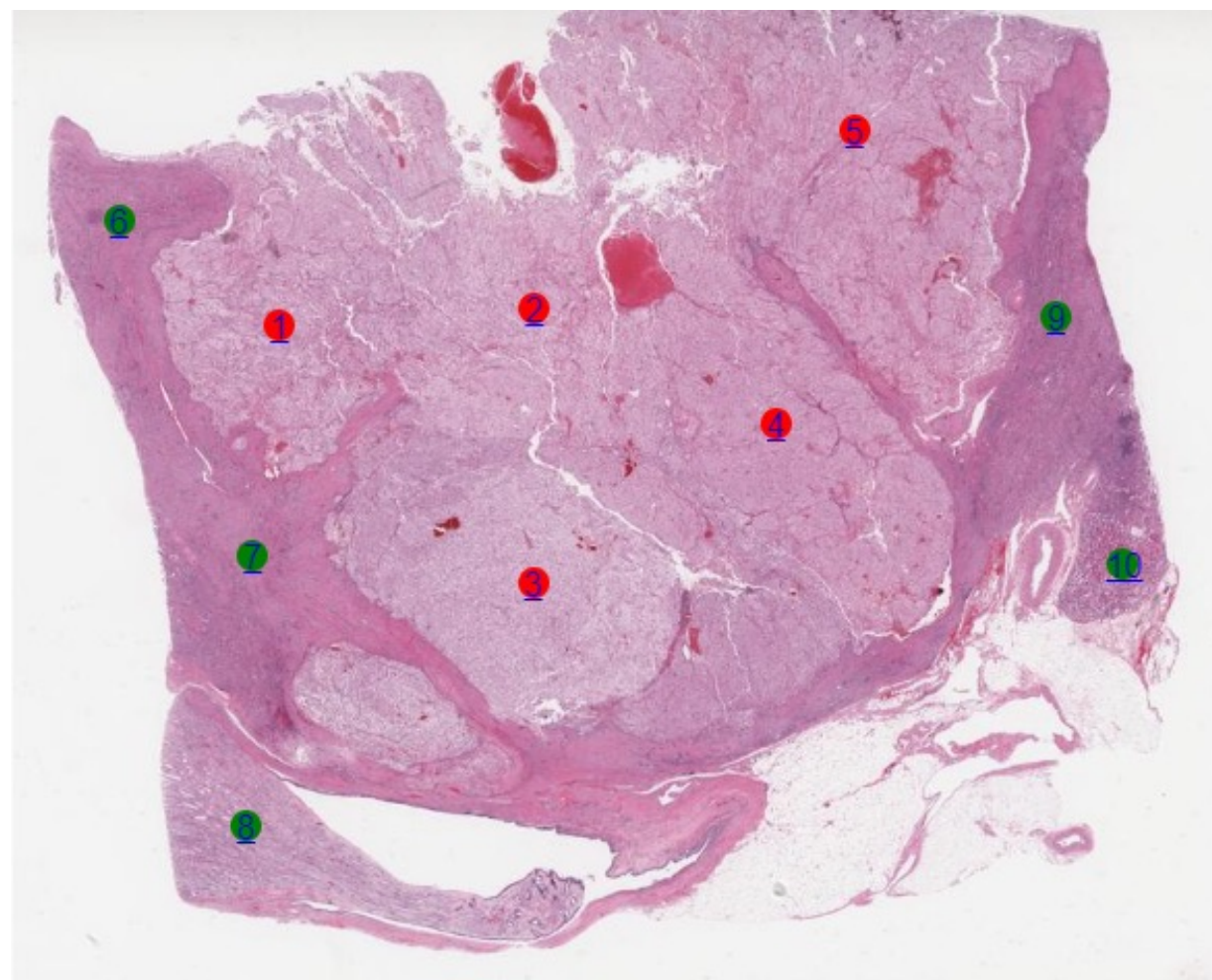


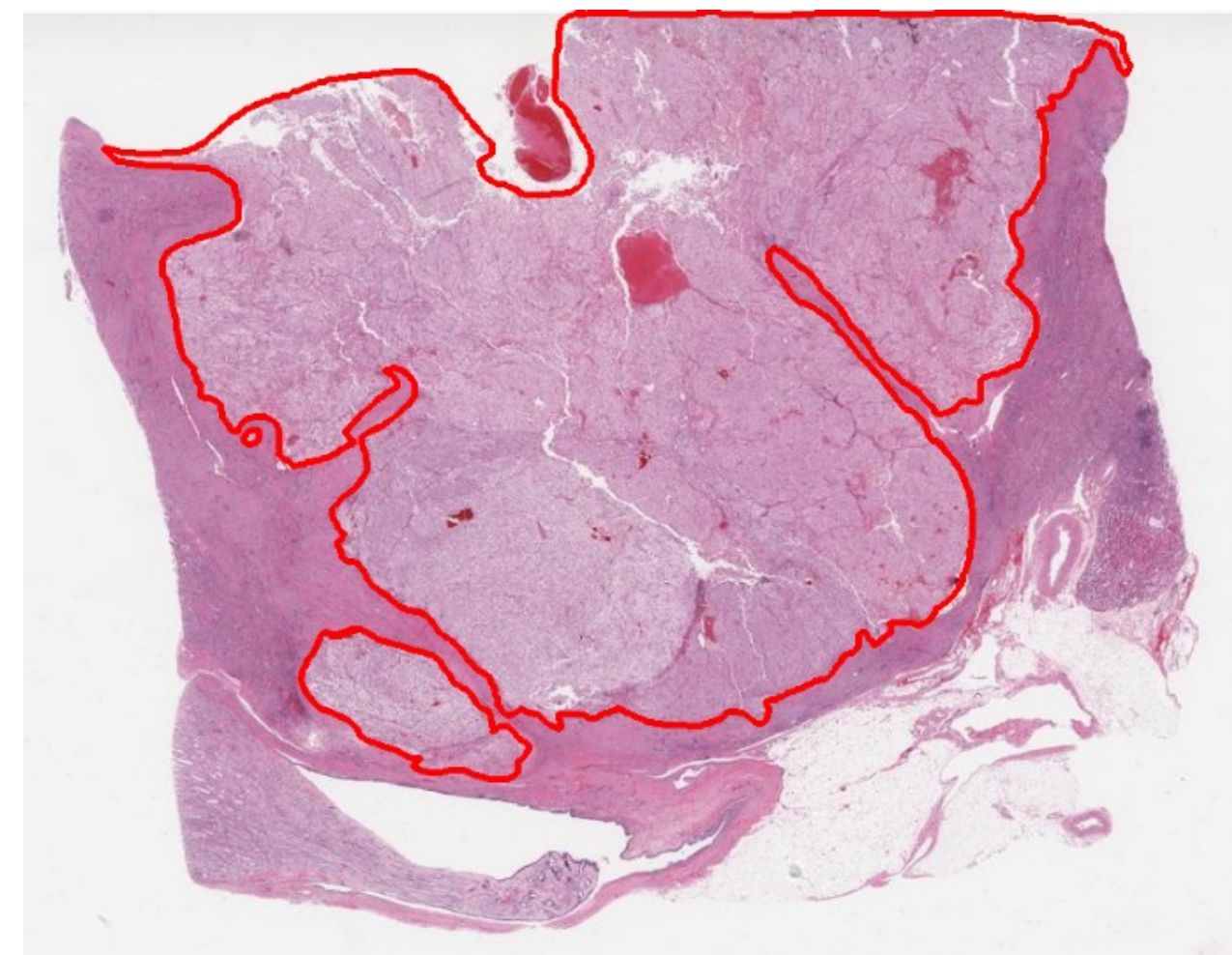
Saving about 95% of annotation time

Three datasets from TCGA

One external dataset

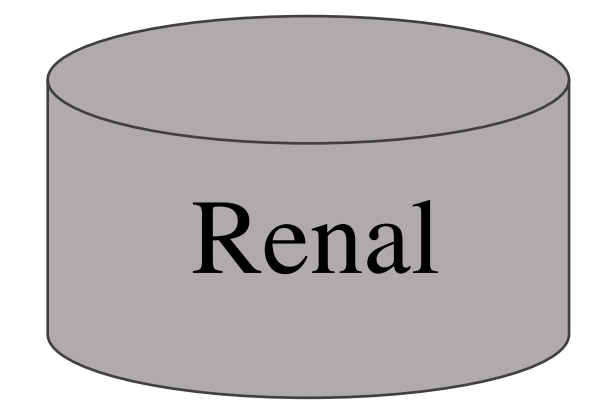
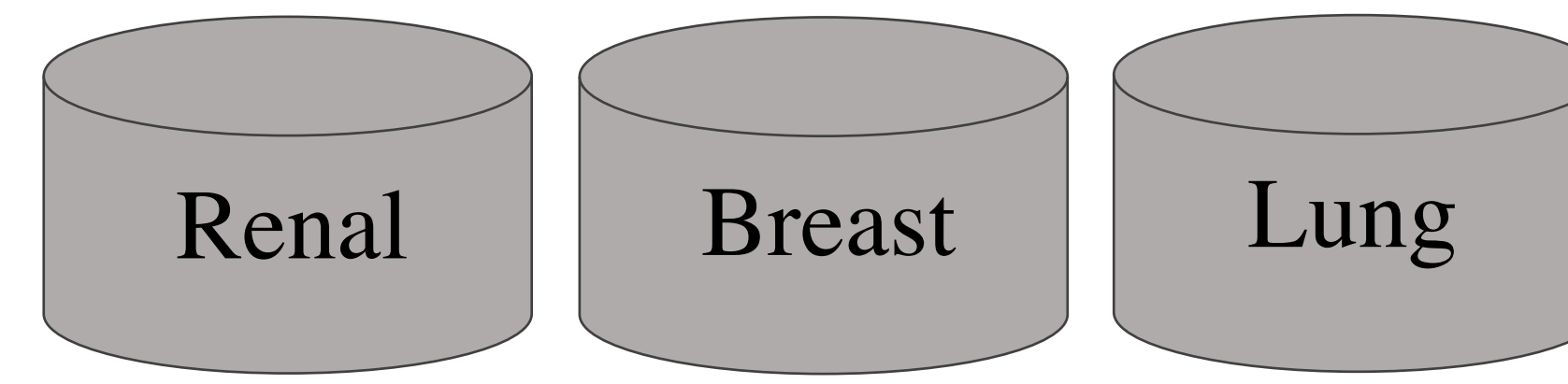


VS



Min-point Annotation

Complete Region Annotation

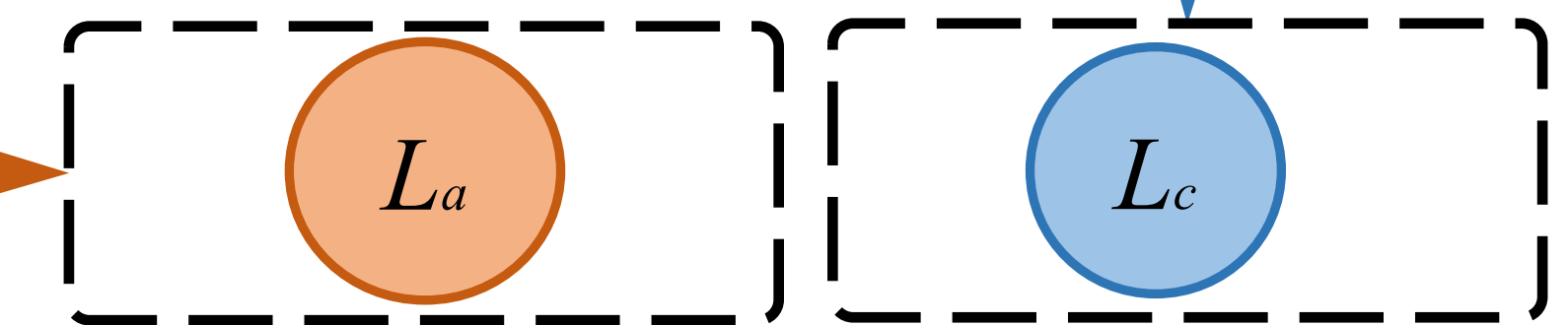
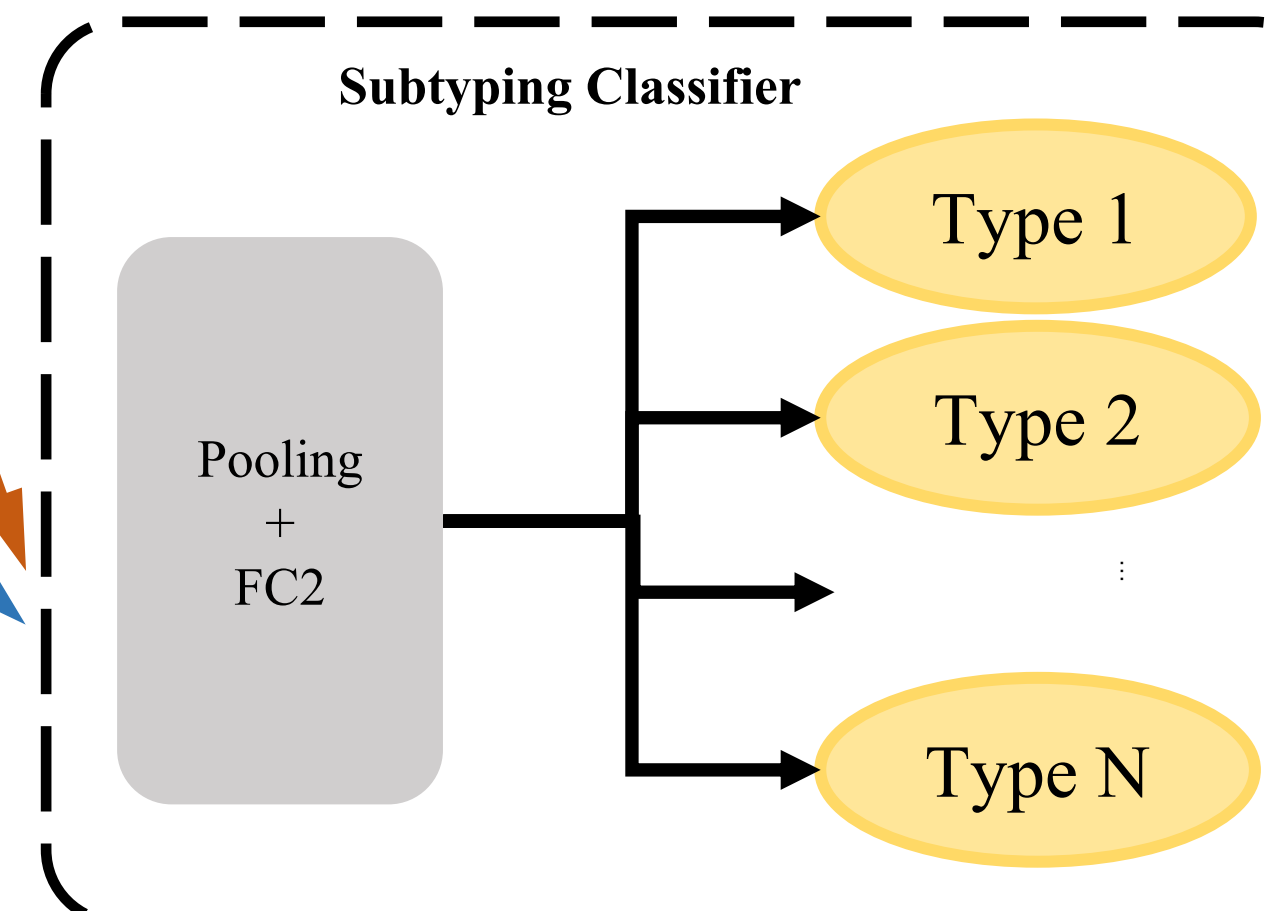
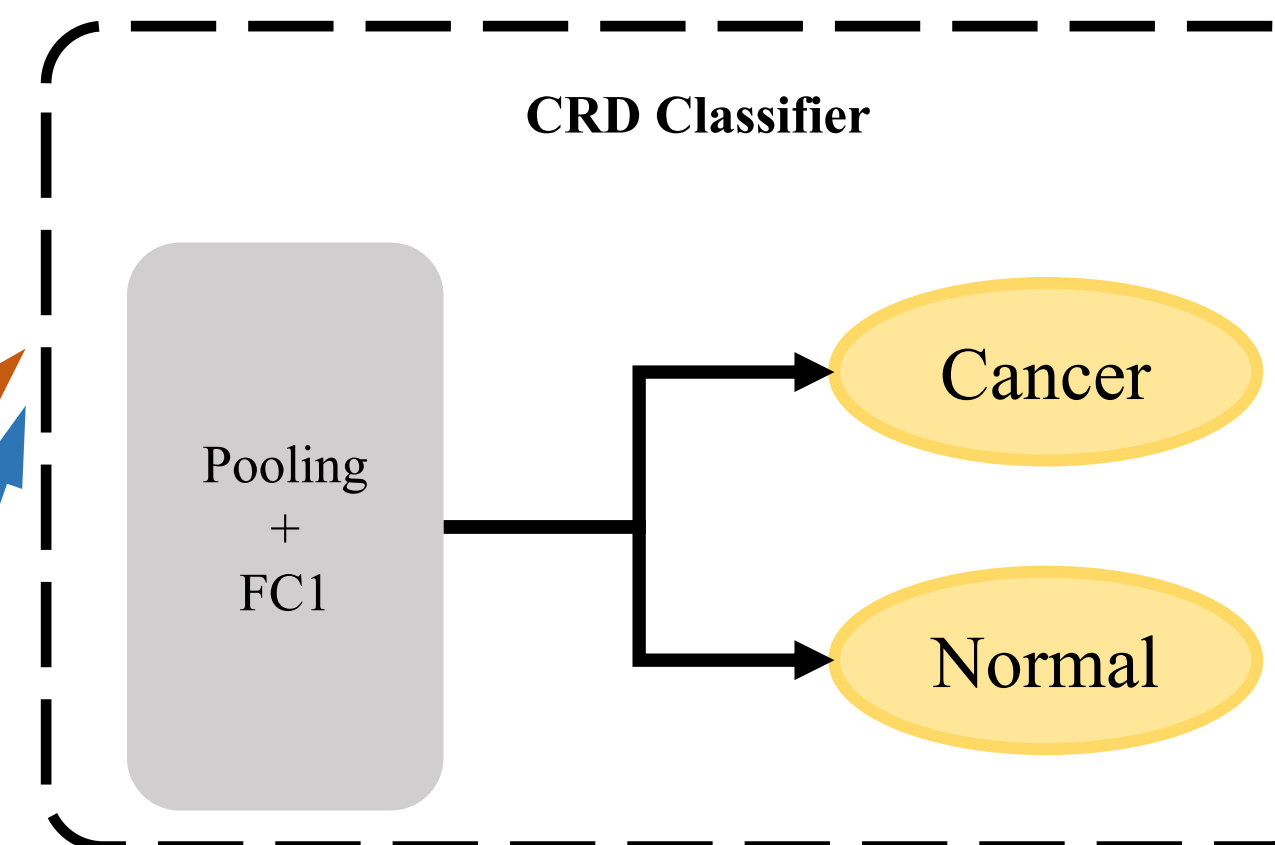
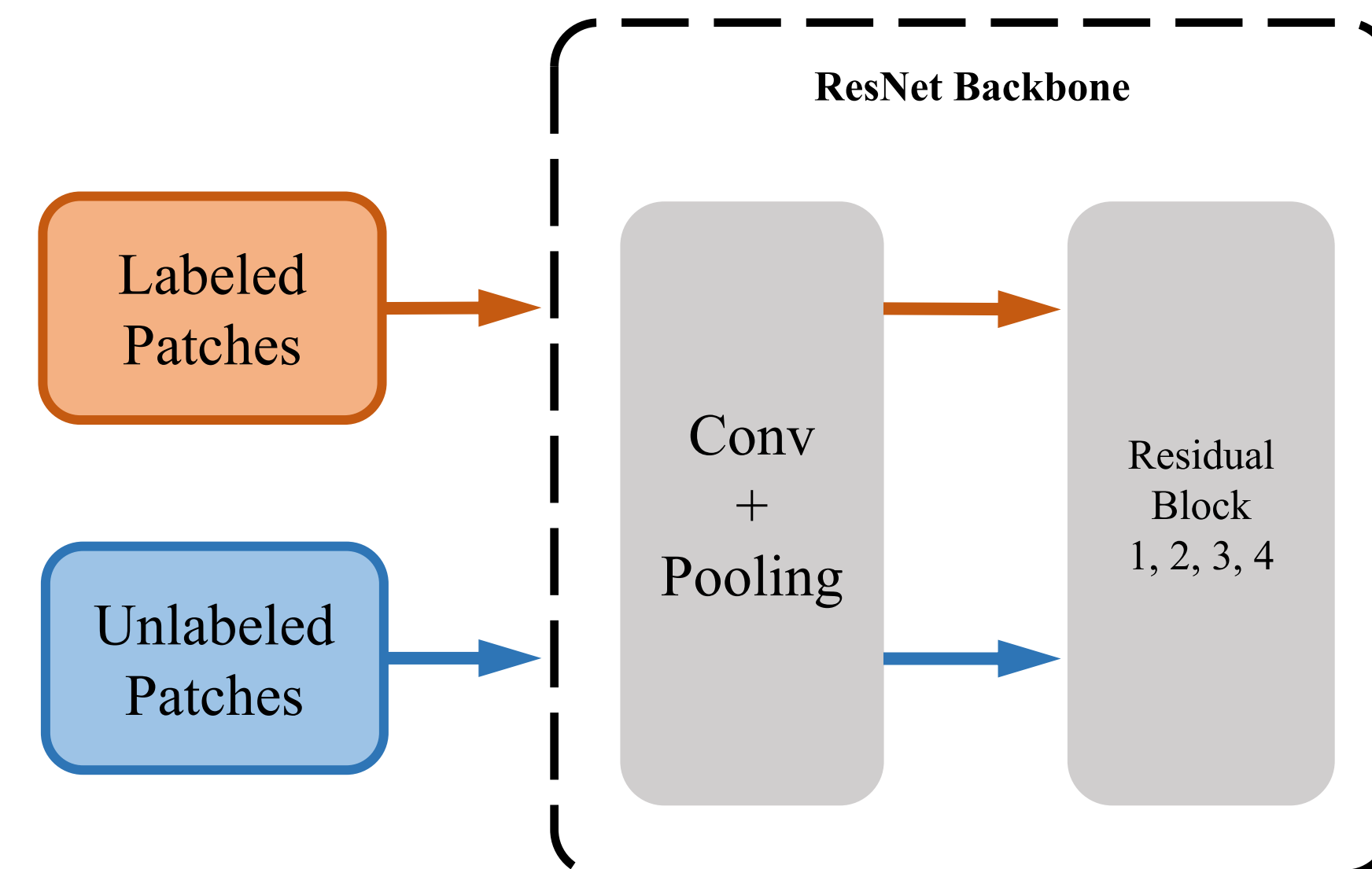
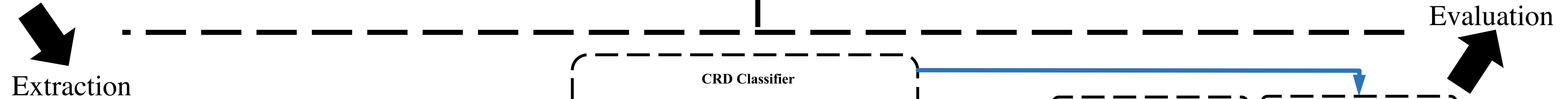


Accuracy

Sampling Rate

Stability

Generalization Ability

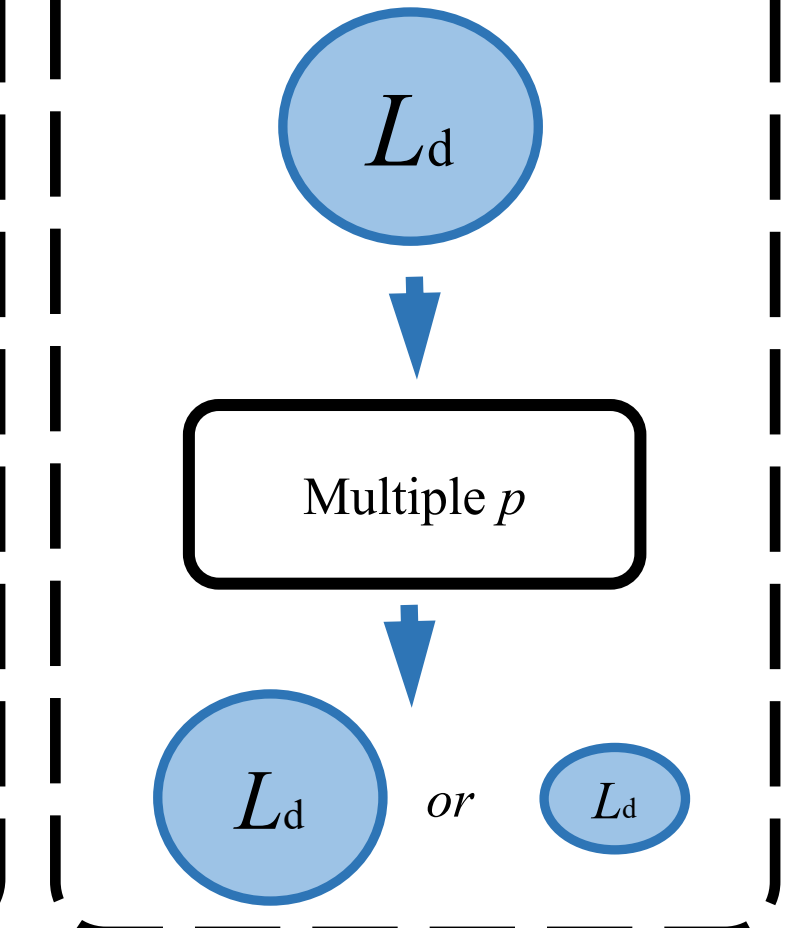
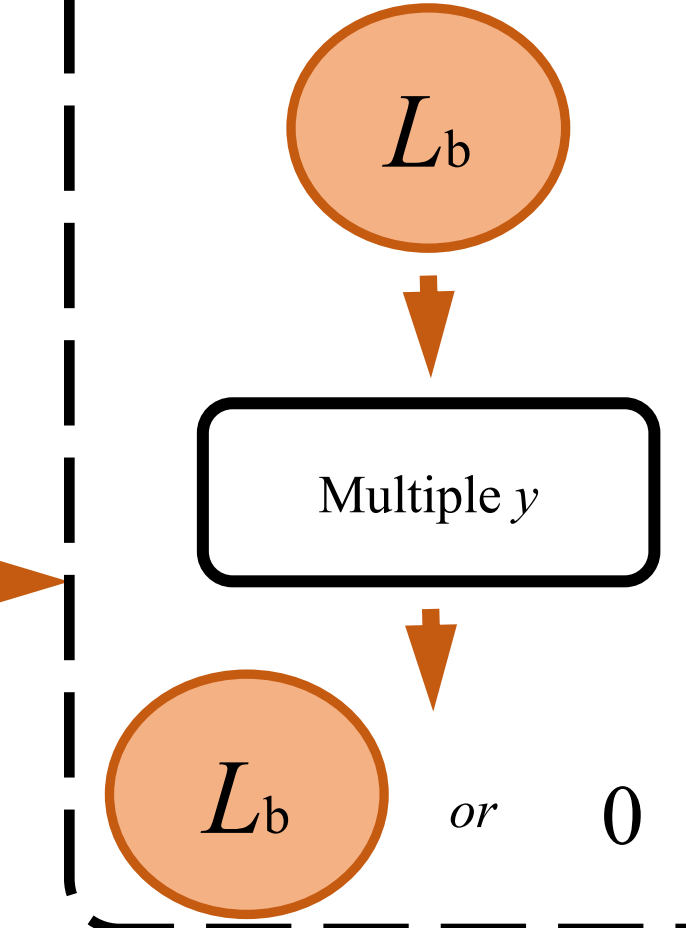


CRD predictions (p)

CRD labels (y)

Hard weight Control

Soft weight Control



The proposed semi-supervised multi-task learning framework