BatchBold

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Active learning trains a ML model with as few data points as possible.The acquisition function is used to prioritize which data points should be labeled next by selecting the ones with the highest scores.
BALD assesses informativeness individually leading to waste of resources because that point can have lots of near-identical copies and so we might end up asking the expert to label K near-identical points.
BatchBALD takes similarities between points while acquiring a batch. It is a data-efficient method that acquires sets of high-dimensional image data,saving resources.It satisfies submodularity enabling a greedy approach:selecting points one-by-one,and conditioning each new points on all points previously added to the batch.
BALD captures uncertainties in predictions of our models.In this,we double count the mutual information intersection between all.BatchBALD avoids it.
Submodularity tells us that there are diminishing returns:selecting two points increases the score more than just adding one of them individually but less than the separate improvements together.
BNN is implemented using MC dropout where it computes the joint entropies between the data points.
It is tested on MNIST,EMNIST,CINIC-10 datasets and it proves to be much more efficient.