The current study suggests a method of Active learning (AL) to achieve data efficiency that recommends acquiring labels from an expert only for the most informative data points from a pool of available unlabelled data. The authors have developed BatchBALD, which is an enhancement to the already existing BALD function where they select multiple informative points jointly for the task of deep Bayesian active learning. They have also worked upon a greedy algorithm that selects fine data batches.

This paper deals with the problem of selecting a batch of diverse samples with maximum mutual information between predictions and parameters such that the uncertainty of the model is reduced. Their goal is to train deep neural networks with the least possible amount of labelled data.

The paper compares different CNN architectures, showing their advantages and limitations and evaluating their retrieval performance. Andreas Kirsch et al. have also conducted experiments to evaluate the performance of BatchBALD using various datasets like MNSIT, CINIC-10, EMNSIT. They compare it with existing batch acquisition methods and measure its effectiveness in terms of informativeness and diversity.

In addition to this, they have also presented the mathematical framework for BatchBALD. They evaluated BatchBALD's performance in terms of accuracy, number of flagged samples and variety of selected samples. The authors provide insights into the strengths and limitations of BatchBALD in comparison to the already existing batch acquisition methods. Further in their experiments, the authors have proved that BtachBALD outshines these methods in terms of both power and variety.