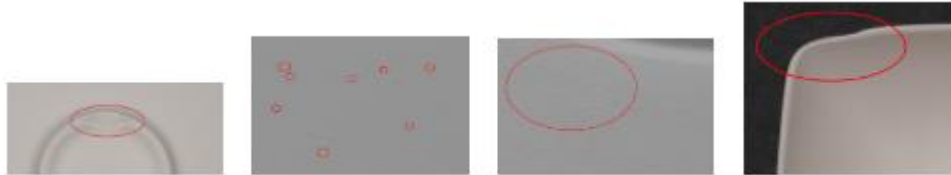


Active Learning based on Transfer Learning Techniques for Image Classification



$$AT(x) = \sum_{m=1}^M \frac{1}{M} \text{KL}[\bar{p}(\cdot|x) || p_m(\cdot|x)],$$

Algorithm	BreakHis data set	Porcelain ware data set
SVM	0.66 ± 0.00	0.84 ± 0.05
Logistic Regression	0.66 ± 0.00	0.63 ± 0.08
LDA	0.57 ± 0.00	0.72 ± 0.05
Decision Tree	0.59 ± 0.04	0.55 ± 0.10
NB	0.56 ± 0.04	0.63 ± 0.06
Random Forest	0.59 ± 0.01	0.75 ± 0.08

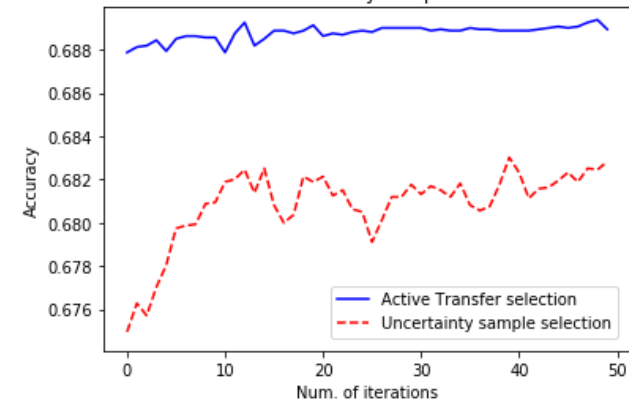
Experimental evaluation

- Uncertainty Sampling criterion vs. Random selection
- Active Transfer criterion vs. Uncertainty Sampling

Active Transfer Learning

- Optimal selection → better performance
- Active Learning + Transfer Learning → AT

Active Transfer selection and Uncertainty sample selection for BreakHis data set



Uncertainty sample and random selection for plates ware data set

