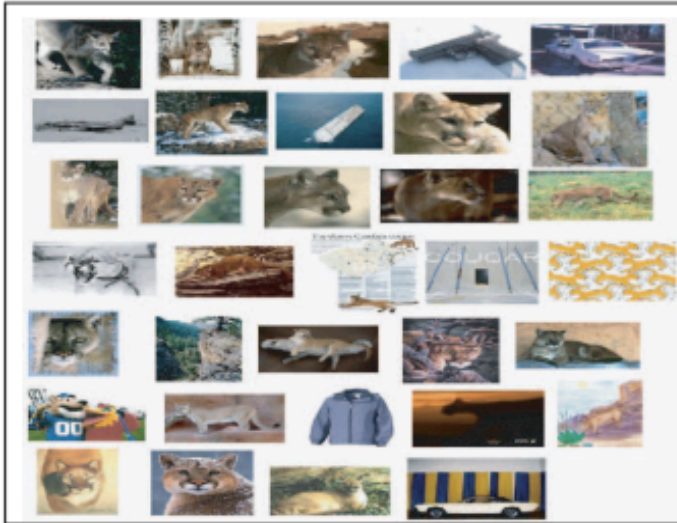


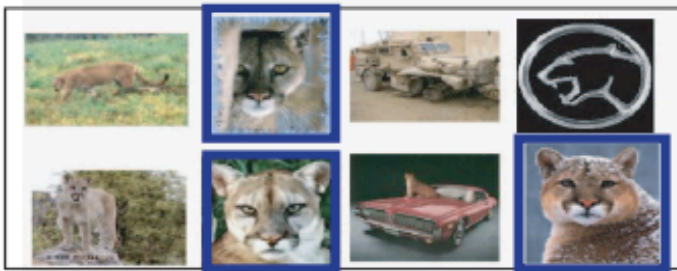
Active Learning with High Dimensional Inputs

Riashat Islam, Yarin Gal and Zoubin Ghahramani

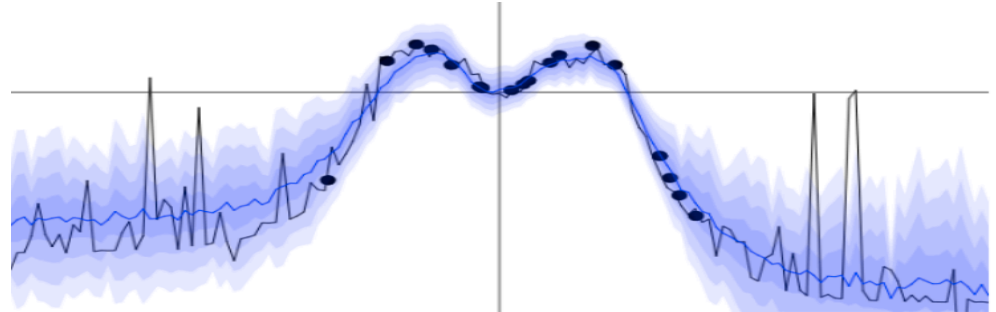
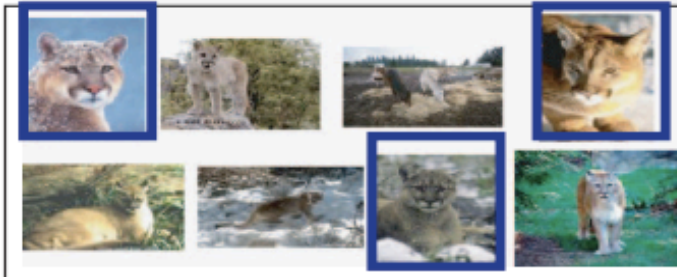
Random Selection



Active Learning Selection



Classifier Results



Model uncertainty measures in deep learning

Bayesian CNN robust to over-fitting on small dataset

Information Theoretic Bayesian Active Learning

Test Error (%) on MNIST	1000 Labeled Samples
SSL with Deep Generative Models (Kingma <i>et al.</i> , 2014)	2.40
Active Learning with Bayesian CNN	1.97
SSL with Ladder Networks (Rasmus <i>et al.</i> , 2015)	0.84