





Classic Active Learning



- > The learner actively chooses data, queries the label, and receives it
- Goal: learn an accurate model while making as few queries as possible

What if labeling takes more effort?



- > Finding the right label requires drilling through a hierarchy
- Labor proportional to # of questions asked
- \succ More efficient strategies exist (e.g. 20 questions)
- Examples of labeling with binary queries include: https://crowdsource.google.com/imagelabeler

Active Learning with Partial Feedback

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$$-\frac{1}{n}\sum_{i=1}^{n}\log\left[\hat{p}(\tilde{y}_{i}^{(t)},\boldsymbol{x}_{i},\boldsymbol{\theta}^{(t)})\right]$$