**Active Bias: Training a More Accurate Neural Network by Emphasizing High Variance Samples**

**Main Idea**
Weight more informative training examples using variance based active learning

**Methods and Related Work**

**Experimental setup**

**Example: Logistic Regression**

**Obj func:** \( -\log(P(Y = y | X)) = \sum \log(p(y_i | x_i, w)) - \frac{c}{80} |w|^2 \)

**Assumption 1:** \( P(Y = y | X) \approx N(w^T x, \sigma^2) \)

**Assumption 2:** \( p(y_i | x_i, w) \approx p(y_i | x_i, w^*) + g_i(w)(W - w) \)

**Experimental setup**

**Results**

**Conclusion and Future Work**

Low training and high validation error: emphasize uncertain or hard examples

High training and high validation error: emphasize uncertain or easy examples

Can we apply this simple and lightweight trick to reinforcement learning?

**References**


