

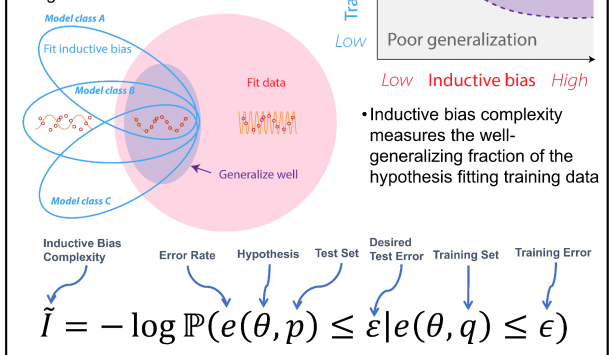
Model-agnostic Measure of Generalization Difficulty

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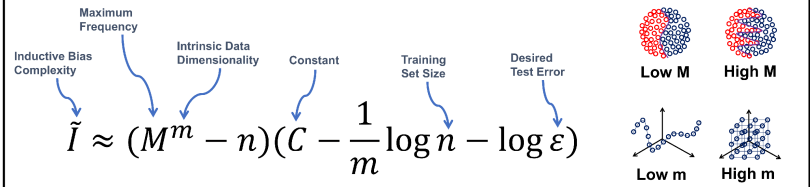
What is Inductive Bias?

- Generalizing on a task requires both training data and specific inductive biases (i.e. choice of model class)
- Inductive bias complexity of a task is how much inductive bias is required to generalize



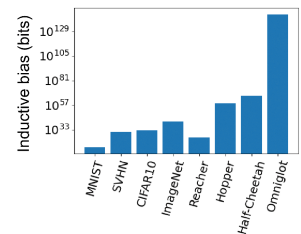
Inductive bias complexity measures the well-generalizing fraction of the hypothesis fitting training data

Practical Measure of Inductive Bias Complexity

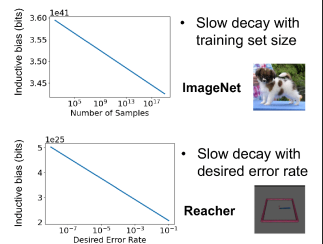


Empirical Inductive Bias Complexity of Benchmarks

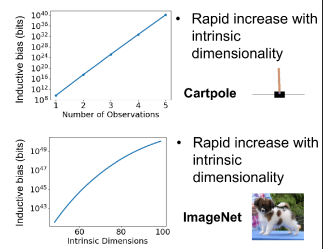
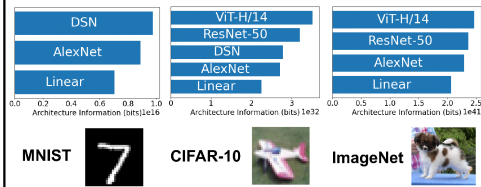
1) Standard benchmarks require massive amounts of inductive bias



3) Trends of inductive bias complexity



2) Harder datasets extract more inductive bias from a fixed architecture



Exact Bound on Inductive Bias Complexity

