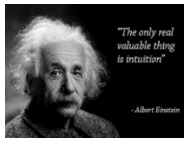
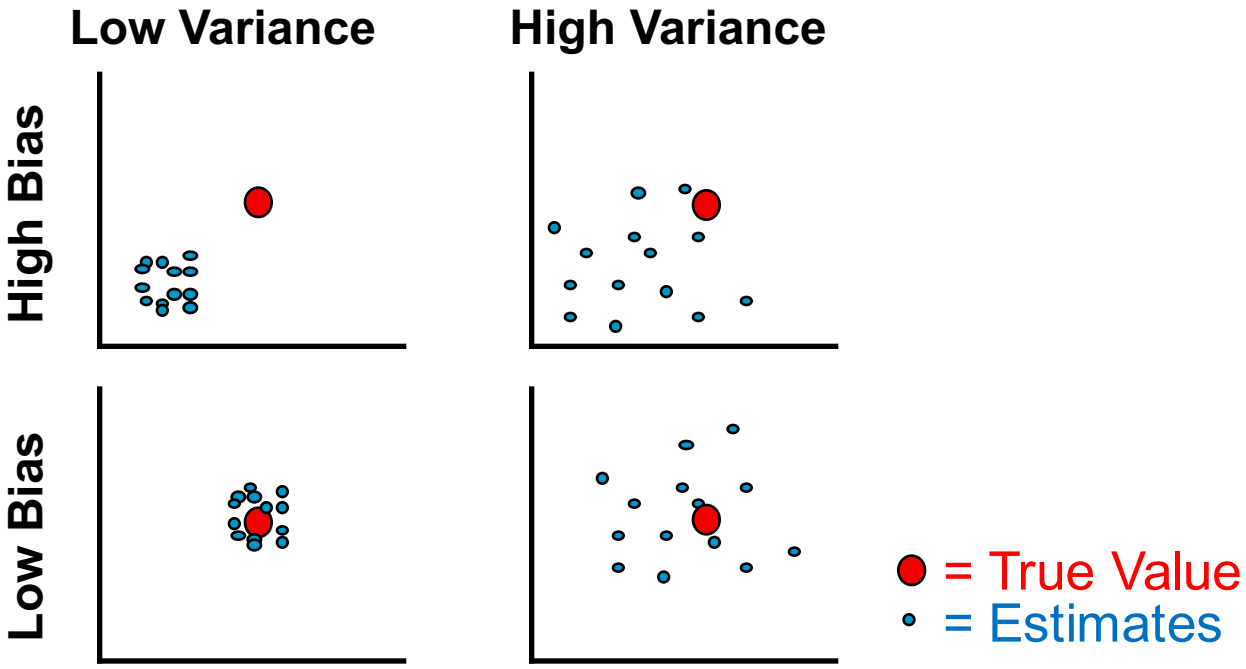
Bias vs. Variance Tradeoff

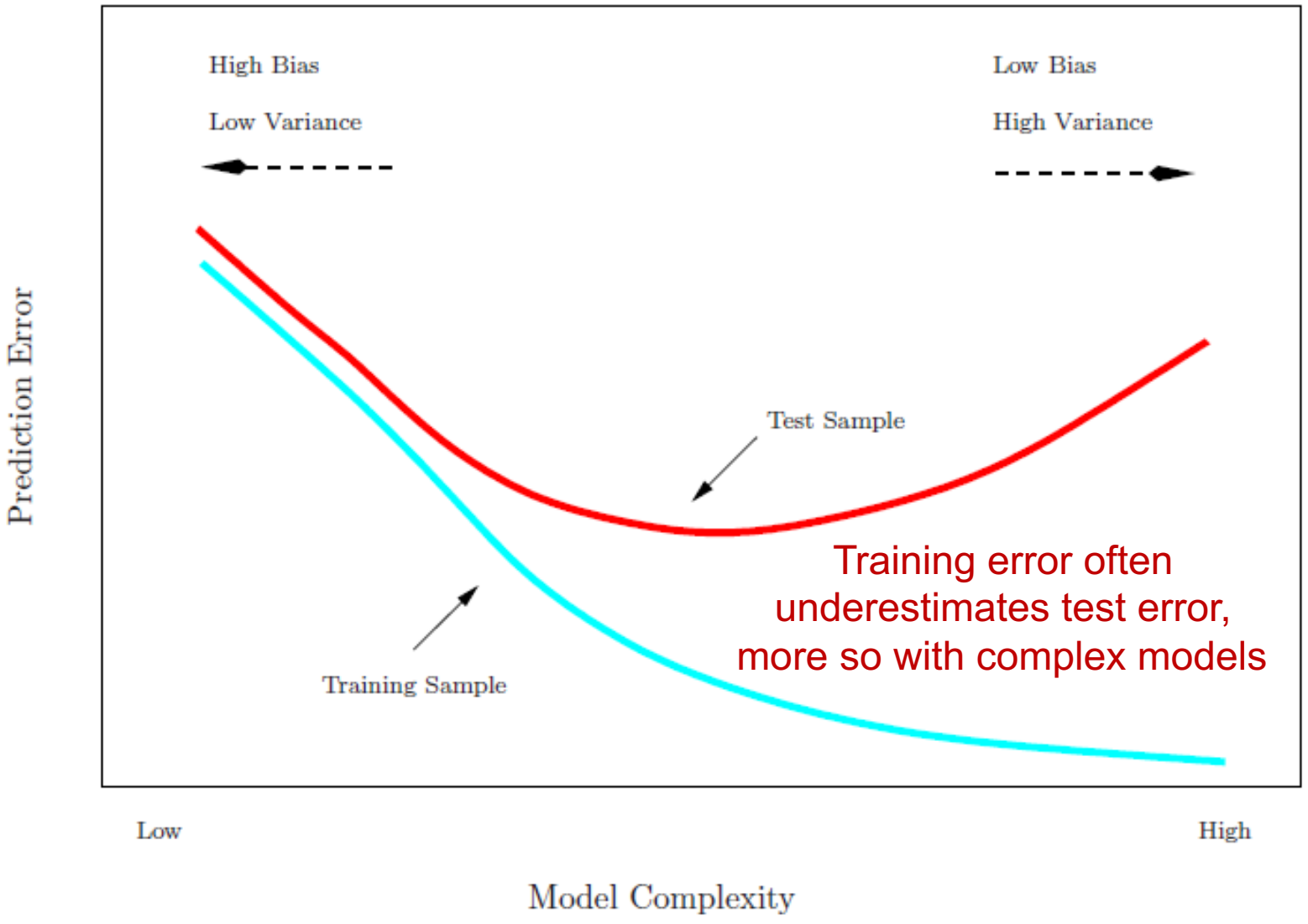
Variance vs. Bias Tradeoff: Intuition





- **Bias** – ability of an estimator or model to predict the **correct value**.
- **Variance** – of the estimator or model **varies** across **multiple samples**
- **Goal** – develop predictive models with low bias and low variance
- This is **not** always **possible** → a variance vs. bias **tradeoff**
- **Low variance** → best for hypothesis testing, inference and interpretation
- **Low bias** → best for predictive accuracy

Model Complexity & Predictive Error



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