

< Bias and Variance - Establishing a baseline level of performance >

- baseline level: What is the level of error you can reasonably hope to get to?

Establish ..

- Human level performance: measure how well humans can do on the task
- Competing algorithms performance
- Guess based on experience



With baseline level of performance, you can judge if your algorithm has high bias or variance



(high bias or variance의 정도를 판단할 수 있는 기준)

Training error \uparrow Validation error가 어느 정도 차이가 나지 high bias \uparrow high variance라고 판단할 수 있는가?

ex)

ex1)

Baseline performance	: 10.6%	
Training error (J_{train})	: 10.8%	↑ 0.2%
Cross validation error (J_{cv})	: 14.8%	↑ 4.0%



Baseline performance (or) Training error is low
비교 (relatively) Validation error is high



Judgement: "high variance"

ex2)

Baseline performance	: 10.6%	
Training error (J_{train})	: 15.0%	↑ 4.4%
Cross validation error (J_{cv})	: 15.5%	↑ 0.5%



J_{train} is high
 J_{cv} is high



"high bias"