Sample title

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Overview

Bias-Variance Trade-Off

Bias Error

- Also called 'Overfitting'

Variance

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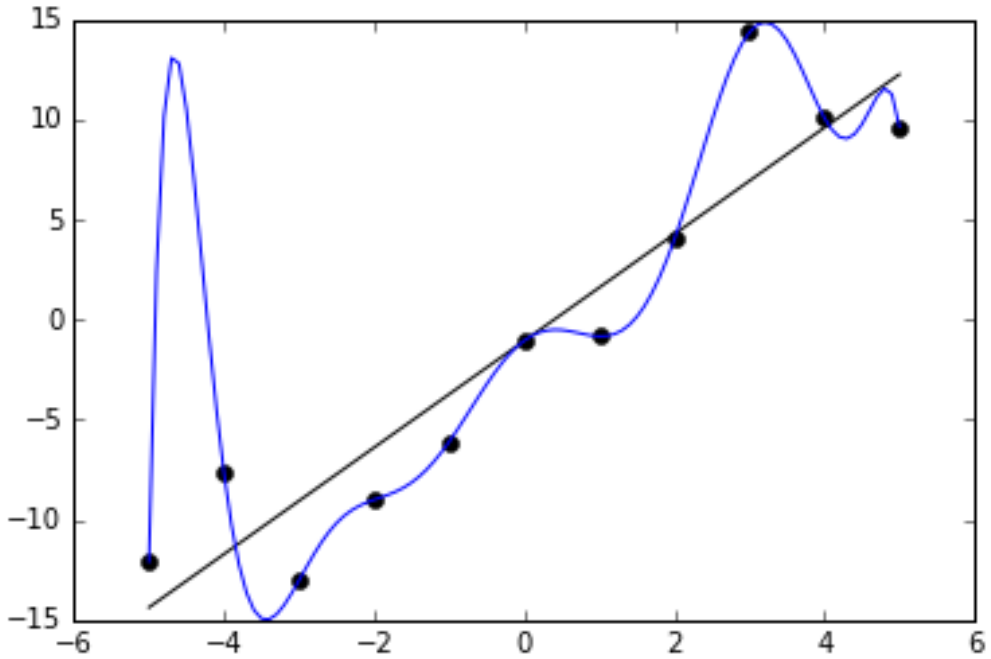


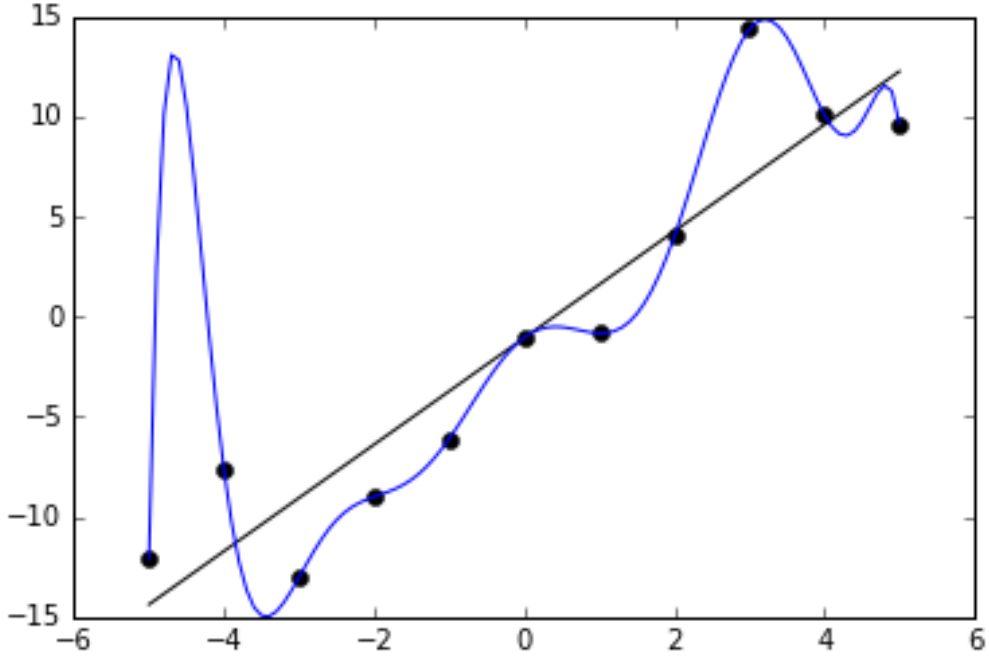
Bias-Variance Trade-Off

Bias Error

- Also called 'Overfitting'
- Predicts test data too well

Variance

- Also called 'Underfitting'



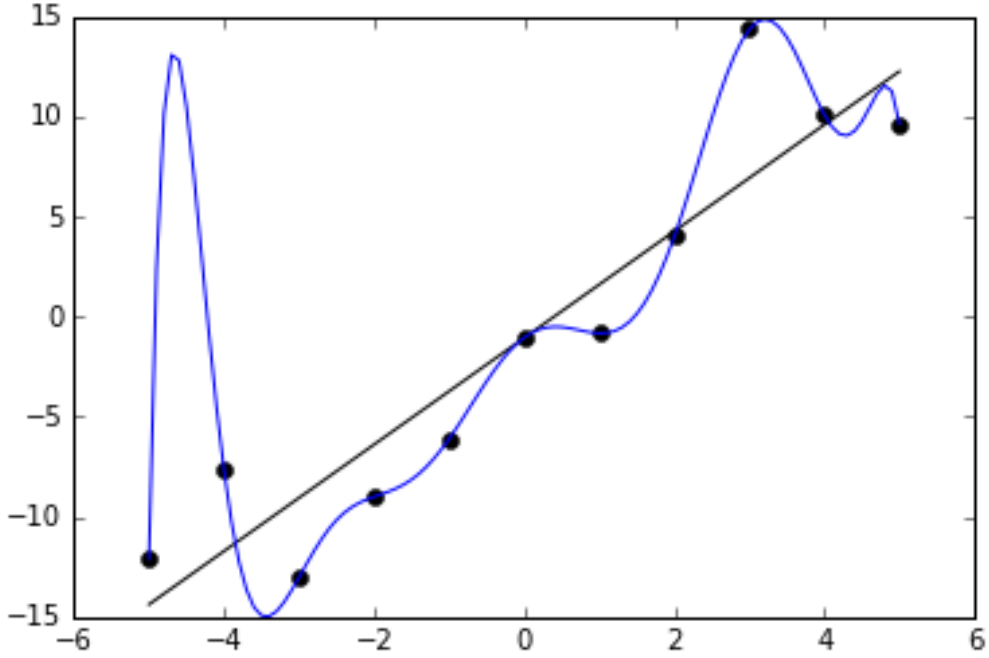
Bias-Variance Trade-Off

Bias Error

- Also called 'Overfitting'
- Predicts test data too well

Variance

- Also called 'Underfitting'
- Generalizes too well



Bias-Variance Trade-Off

Aiming for the lowest possible error typically means finding a "middle-ground"
A common technique for this is determining the minimum *mean squared error.*

$$\text{MSE} = \left(E\left[\hat{f}(x)\right] - f(x)\right) + E\left[\left(\hat{f}(x) - E\left[\hat{f}(x)\right]\right)^2\right] + \sigma_e^2$$