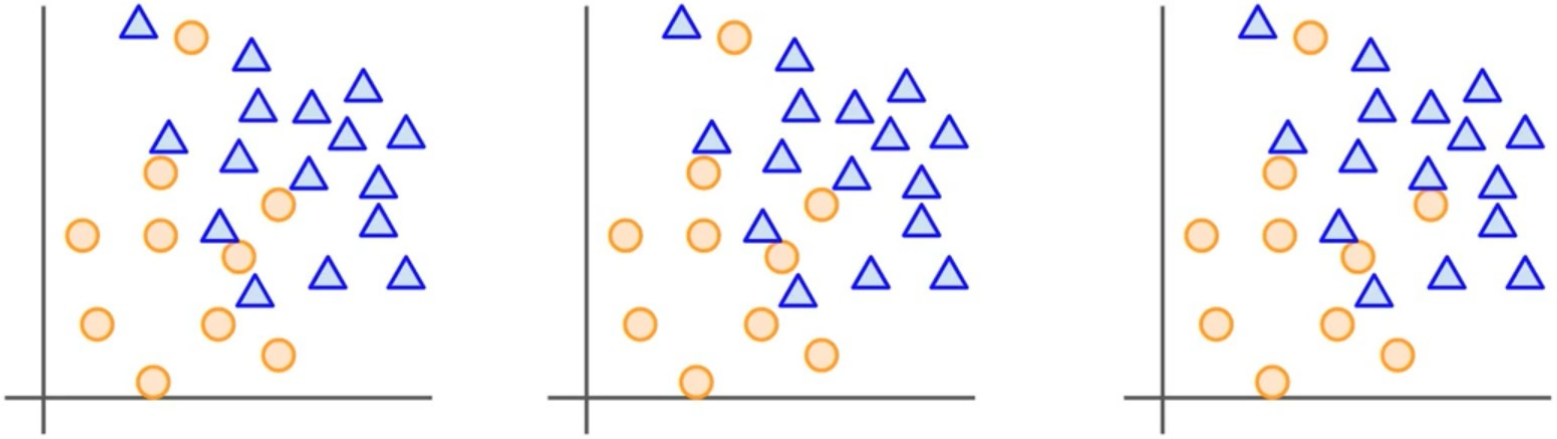
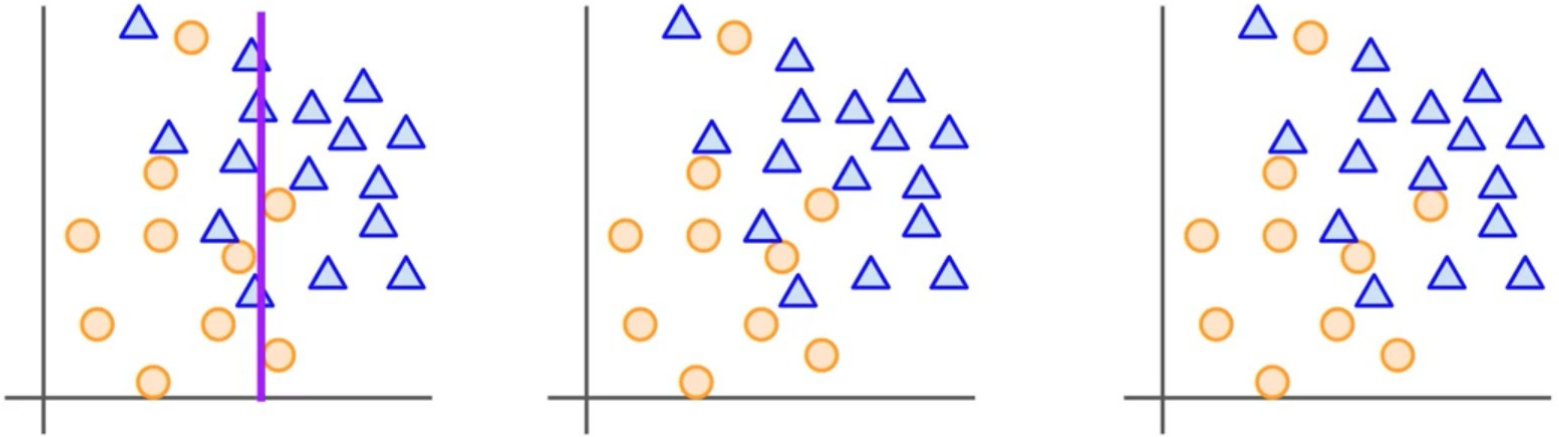
Underfitting and Overfitting

Underfitting vs. Overfitting

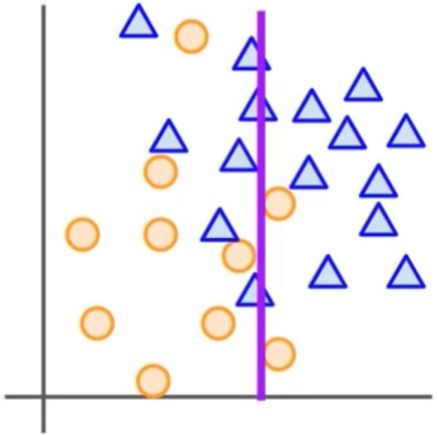


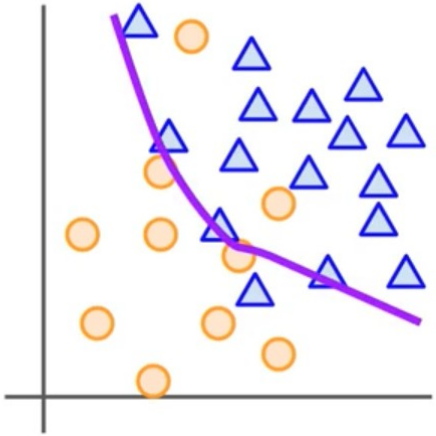
Underfitting vs. Overfitting

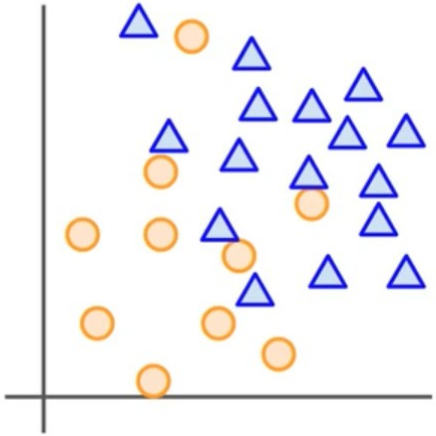


Underfit: Model fails to capture trends in the data

Underfitting vs. Overfitting

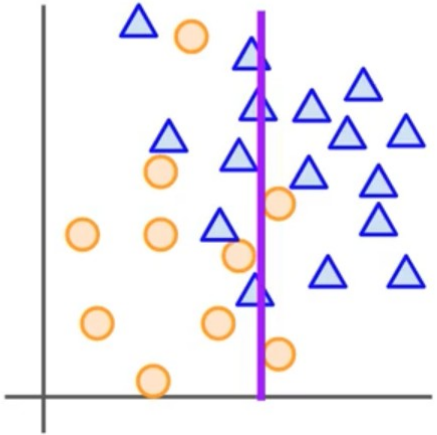




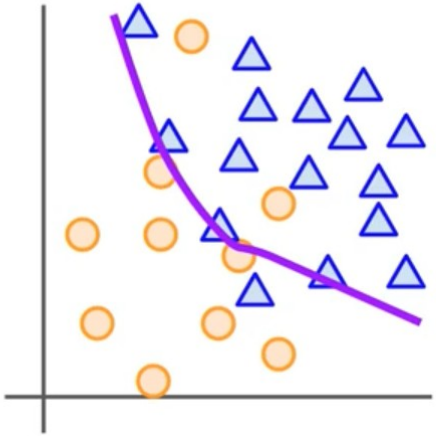


Underfit: Model fails to capture trends in the data

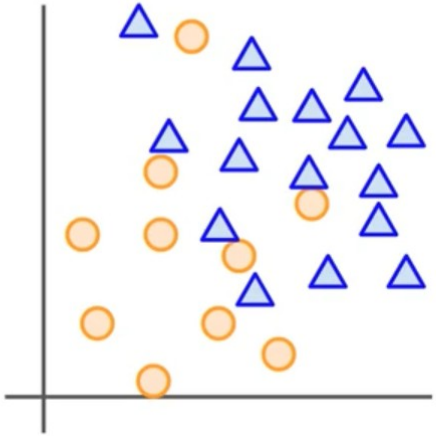
Underfitting vs. Overfitting



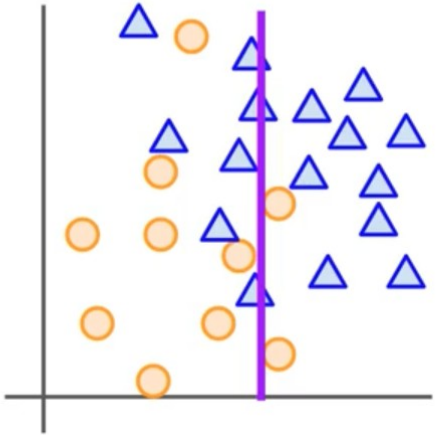
Underfit: Model fails to capture trends in the data



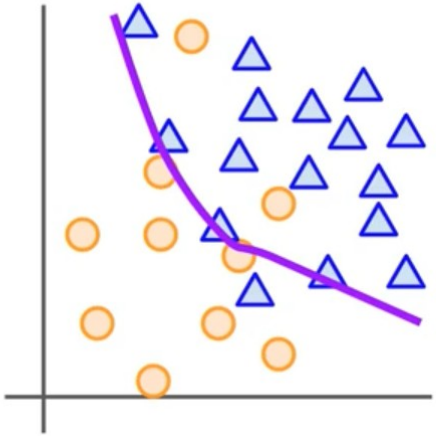
Good fit: Model captures trends and can generalize to unseen data



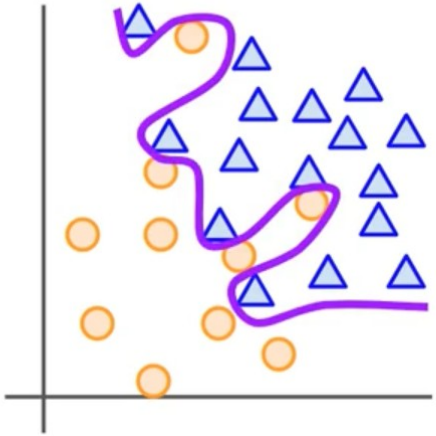
Underfitting vs. Overfitting



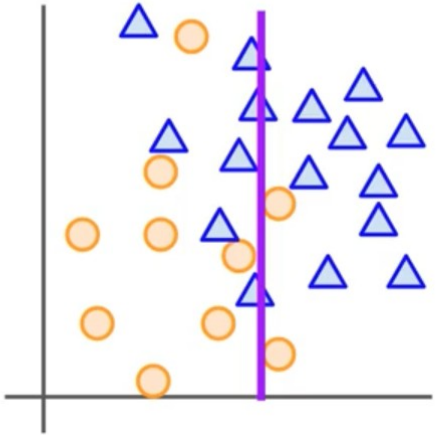
Underfit: Model fails to capture trends in the data



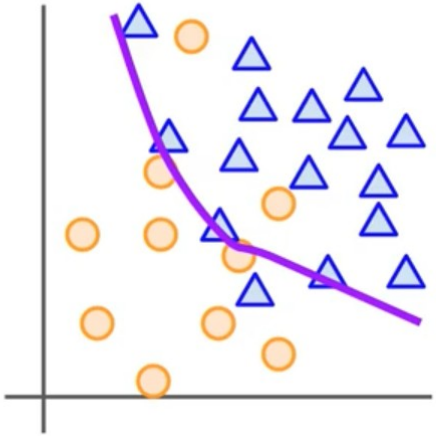
Good fit: Model captures trends and can generalize to unseen data



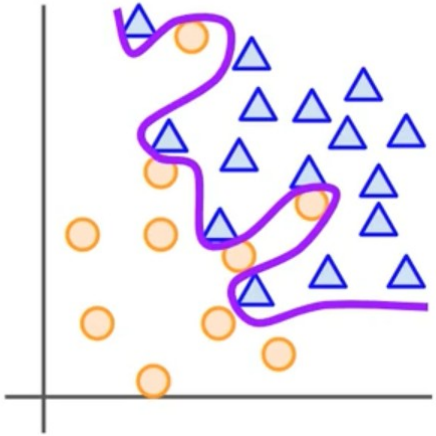
Underfitting vs. Overfitting



Underfit: Model fails to capture trends in the data

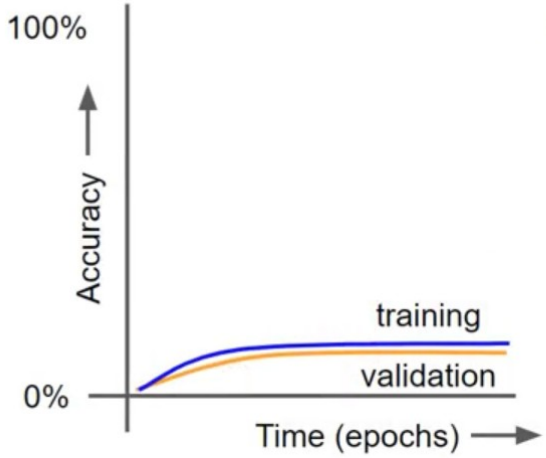


Good fit: Model captures trends and can generalize to unseen data

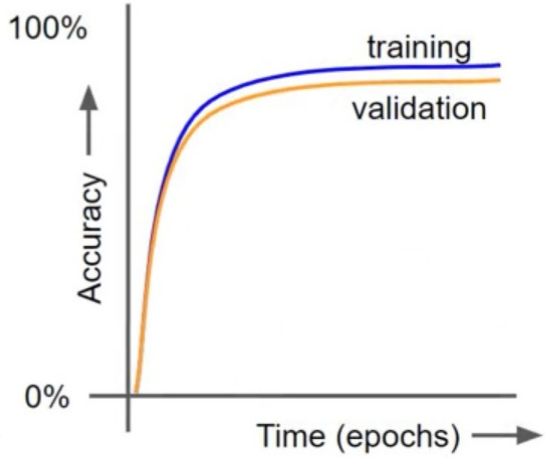


Overfit: Model captures training data trends but fails on unseen data

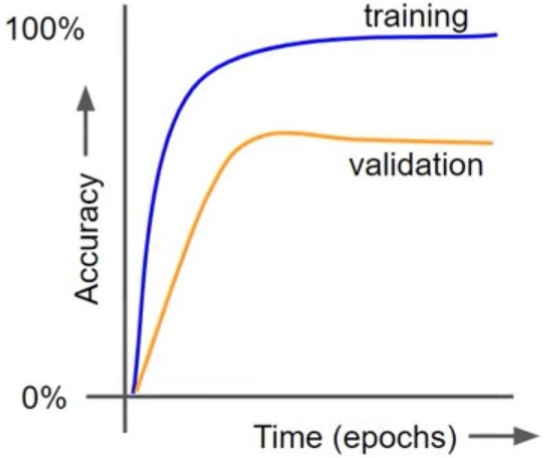
Spotting Underfitting and Overfitting



Underfit: Model performs poorly on training and validation data

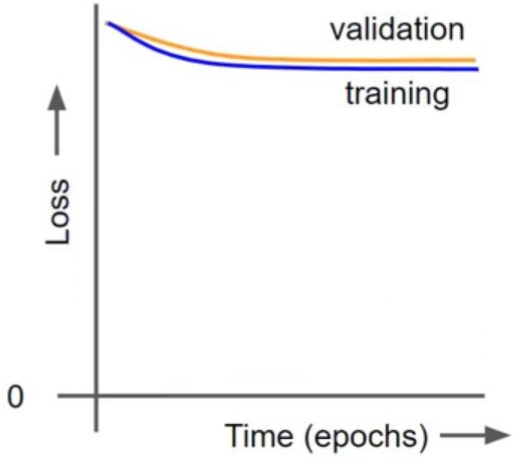


Good fit: Model generalizes well from training to validation data

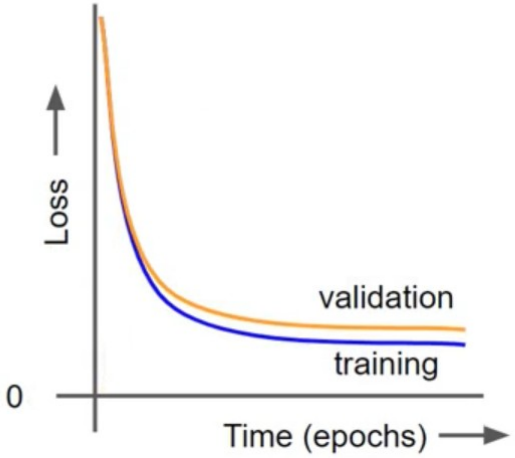


Overfit: Model predicts training data well but fails to generalize to validation data

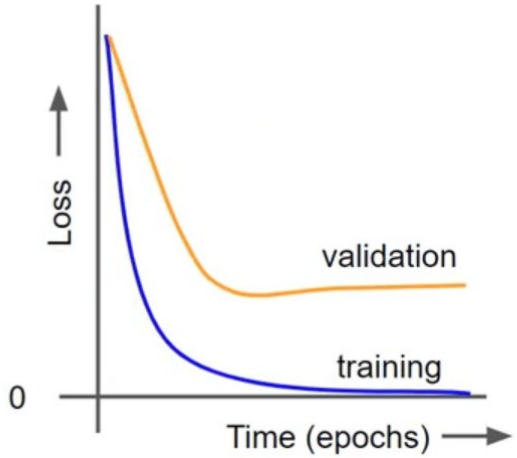
Spotting Underfitting and Overfitting



Underfit: Model performs poorly on training and validation data

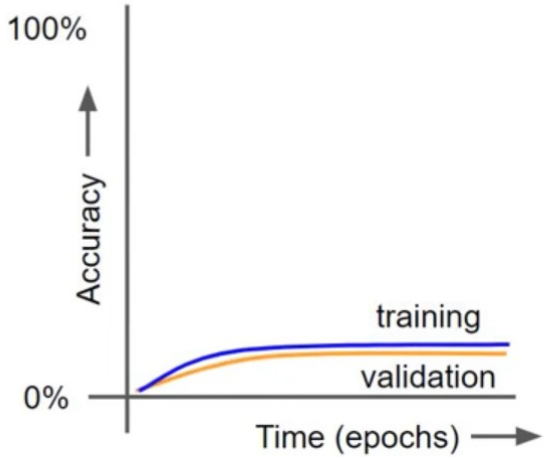


Good fit: Model generalizes well from training to validation data



Overfit: Model predicts training data well but fails to generalize to validation data

Fixing Underfitting

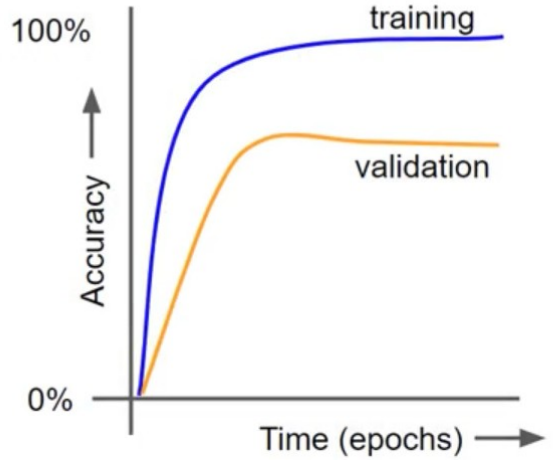


Underfit: Model performs poorly on training and validation data

- Get more data
- Try different features or more features
- Train for longer
- Try a more complex model (more layers, more nodes, etc.)

Fixing Overfitting

- Get more data
- Early stopping
- Reduce model complexity
- Add regularization terms
- Add dropout layers (for neural networks)



Overfit: Model predicts training data well but fails to generalize to validation data

Conteúdo Adicional Recomendado

Embora seja opcional, recomendo que você dê uma olhada nos artigos e vídeos a seguir para saber mais sobre os tópicos abordados nesta lição:

- Video: Underfitting in a Neural Network
- Video: Overfitting and a Neural Network
- Aqui está um vídeo de aborda o overfitting de forma mais profunda: Caltech Lecture: Overfitting
- Dropout: A Simple Way to Prevent Neural Networks from Overfitting