Preliminary Work

Meta-Learning

Meta Learning

Machine Learning ≈ 根據資料找一個函數 f 的能力

$$f(\quad) = \text{"Cat"}$$

Meta Learning

≈ 根據資料找一個找一個函數 f 的函數 F 的能力

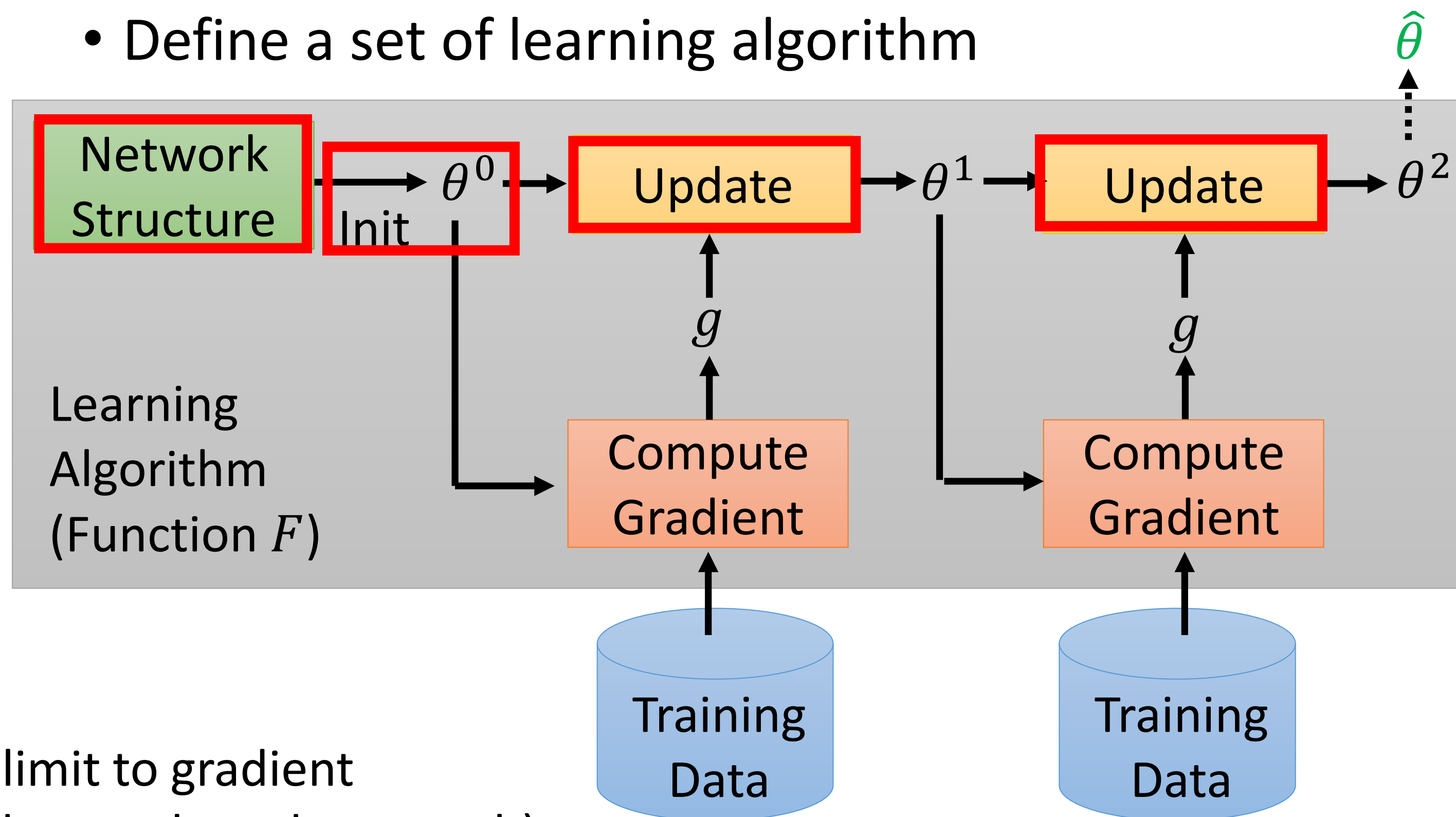$$F(\quad) = f^*$$

cat　　dog　　cat　　dog

Training Data

Preliminary Work
Meta-Learning

Meta Learning

Different decisions in the red boxes lead to different algorithms. What happens in the red boxes is decided by humans until now.

- Define a set of learning algorithm

$\hat{\theta}$

Network Structure → Init → θ^0 → Update → θ^1 → Update → θ^2

Learning Algorithm (Function F)

g

Compute Gradient

g

Compute Gradient

Training Data

Training Data

(limit to gradient descent based approach)