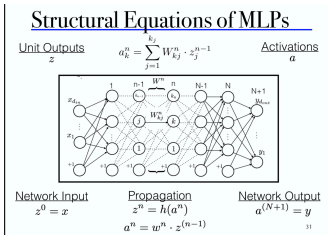
20 neural networks intro

Logistic regression : { linear regression + threshold function
                      { 相当于 learn a feature

如果同时学很多个LR : 相当于很多feature + A classifier

= MLP

XOR : recognize 认 two inputs are different (线性不可分)



learing : $w^* = \underset{w}{\text{argmin}}\ \text{Exp}(L(w))$ ⟶ expected

loss functions : 0/1
sum-of-squares
cross-entropy

Gradient Descent : Choose init state W_0
until converge, do :

$$W_{t+1} := W_t - \gamma \boxed{\nabla E(W_t)}$$ 怎么计算?

↳ expected loss

training process of NN :

① Choose error function $E(w)$
② find best params for $\underset{w}{\text{argmin}}\, E(w)$
- random init to get W_0
- loop until converge :

$$W_{t+1} := W_t - \gamma \nabla E(W_t)$$

to find $\nabla E(W_t)$, use back prop