Quiz2 in guest lecture RL

Q 7. 12. 13. 14

Q7

84x84x1 => 7x7x2 zero pad=3 (mode="same")=>90x90x1

=>84x84x2 => 3x3 pooling

=>28x28x2 => (28x28x2) x4

=>4

Q12

-4 -3 -2 8 10 22

Red in blue's 3nn

Blue is not in red's 3nn

Q13

5 kids

(1) We know one of them is girl P(boy>=1|Amy=girl)

(2) We know there is a girl P(boy>=1|there is a girl)

(1) P(# boy>=1|Amy=girl, there are 5 kids)

= P(# boy>=1|there are 4 unknown kids) = 1 – 0.5^4

(2) P(# boy>=1|there is at least one girl in 5 kids)

= P(# boy>=1, there is at least one girl in 5 kids)/P(there is at least one girl in 5 kids)

= (1- 0.5^5-0.5^5)/(1-0.5^5) = 30/31

P(#boy = 5) P(#girl =5)

Q14

S0 S1 S2 s0=[1,0,0]

O0, O1. o0

T=[0.38,0.2,0.42;
0.33,0.37,?;
?,?,?]

s1 = s0*T

s2 = s0*T*T

P(happy/angry|S1/S2/S3)

P(o0=O1,o1=O0|s0=[1,0,0])

P(oT=O1,o(T+1)=O0|s0=[1,0,0]) when T=>inf

s1 = s0*T

s2 = s1*T

.....

T=[0.38,0.2,0.42;
?,?,?;
?,?,?]

T is a transition matrix

Q?: what is st when t-> inf

st = [?, ?, ?]

We know T

We need to calculate st when t-> inf

S0=[0.5,0.5]
v1=[1, 0]
v2=[0, 1]
<Vi,Vj>=0
S0 = 0.5*V1+0.5*V2

Phi(x1)
phi(x2)

- [<phi(x1),phi(x1)>, [<phi(x1),phi(x2)>;
- <phi(x2),phi(x1)>, [<phi(x2),phi(x2)>]

Statement for T (n by n): n states. P(Sa->Sa)+ P(Sa->Sb)+ P(Sa->Sc)+….

T: sum of each row of the T is 1

All element of T >= 0

For this T

V*T = lambda*V

One of the lambdas is 1, all the other is smaller than 1

V*T = V when lambda = 1

V*T < V when lambda < 1

s0, s1=s0*T, s2=s0*T*T, s3=s0*T*T*T

s0 = a1*v1+a2*v2+a3*v3…….

s0*(T^N) = a1*v1*T^N+a2*v2*T^N +a3*v3*lambda^N…

= a1*v1 + a2*v2 when N-> inf

Q11

- 10 features
- 3 possible split
- Passed 6 split 0->1->2->3->4->5->6->

10*3

A,b,c, d,e,f,g

Use another feature

d,e, f,g

3.5

Candidate split: 1.5,2.5, 3.5