COMP 2610/ COMP 626/19: = 14/x19

Tutorial 2

Theory

$$P(AUB) = P(A) + P(B) - P(A \cap B) - O P(A \cap B) = P(A,B).$$

Conditional Probability

$$P(A/B) = P(A,B) - \bigcirc.$$

$$P(B)$$

$$P(A,B) = P(A/B).P(B) = P(B/A).P(A) - (2.1)$$

Sum Rule

$$P(B) = \sum_{i} P(B/x_i) \cdot P(x_i) \qquad (3).$$

	2000	12 ED	Carley 1		- 11-	Total State	
-(2)	al *	2 (0.2)	B (0.2)	O Letter	G1 (0.6)		
10		(2)				T	
	Apple	3		3	wross C =	(Tex	no H
		4	1	3			
1	Orange	1-5	- 6		A		
1	Limes.	3,	0870	4.		A BANK TO	
		1		1	100		
		P(F/R)	P (F/b)	P	= /9).		
	T ===	10	2 4	a=7.10	9 = (10)	*) 9	
	- 100	0 =	300 +	ロラミ	± 20	7)-
TO	a. P(A)	= > F	P(1/2).P(A/2) -)×P(A/r) +	(:2	·	,	
		Vielre	1, P(A/) +	PLANPL	A/1 + D	(a) x P	(A /)
		P(r	-) × r ('yr) +	1(8) 11 (7	76) TF	(9) 1	(1./9)
		= 0.2	x 3/10 +0	.2×5/0	+ 0.6	$\times \frac{3}{10}$	1.3 0
		= 0	.6 + 0-K0	+1.8			
		Ī	0 10	10			
		=	3.4 = 0.	34 "]	
			10	//.		P	(%)
-0			The Section	12/34	Se V. 12 W	A 1=)	= P(0.09)
		/- \	-(-)	2(4/)	1 2 (-)		= P(019) P(9)
	b. P(9)	(0) =	P(900)	$=\frac{P(99)}{}$	(9) 4X		. (-)
		2	P(0)	5 P	(\ 2) P(0)	(ak)	
	8.	2.5	G	24021	(42)1(4)	42)	
	p(ann)=	O. Lx 3	$\frac{3}{10} = 0.18$				
					2 0 5	21	
	P (0) = 0	. 210.4	+ 0.2x0.5	+ 0.680,	3 = 0.3	36	
			1				
TE	- P(9/o) = 0.18	0.36 =	1.5/			
(2)	<i>'</i>			//			

	7-17-4	CON	11 = (A A)	71	44
Q <u>3</u> .		X	19	Tot	
	and the state of	.0	- I CA	70	
Table represent	0	100	250	350)
Number of occurance in	1	150	500	6 St	2
1.000 trial.	4) (1)	1 = 10			190
Tot	TYR	250	750.		
					d
a. P(X=1, Y=1) = Number of (x = 1, 7 :	= 1) =	= 500 =	0.5	
Total Occ					
				1	
b. P(X=1) = Occurance of X	=		£ .	Apple	
Total Ocerrano	19 - 19 - 19 - 19 - 19	1	4 1 giv	5.45	
= 750 = 0			18 5	cont 1	3
1000	7		7		38
	(2)	9	17)9		
P(X=1) = P(X=1, Y=0)	+ P (x	=1, Y=	= 1)	7	
			= 0.75	-	18
1000	10		S == (A)	. 10	
+ P(b) MF(A)6) + P(d) x P(A)6)	P(3/4).	176			
				F. TA.	
c. E[x] = x.p(x)	+ 3	Exce	4		18
$= 1 \times 0.75 + 0$	0 X O.	25			100
= 0.75	101	OL			
1		46			
(10)4)		Car			1
d. $P(Y=1/x=1) = P(Y=1)$	X = 1				
$(P) \Rightarrow (P) $	•	75 =	(m) e)		
= 500/100		0.5	- 2		
0.75	-, -	0.75	-		-
73		1	-//	1	
			4		
				13	

$$P(Y=1/X=0) = P(Y=1/1X=0)$$

$$P(X=0)$$

$$= 150/1000 = 3$$

$$250/1000 = 5$$

$$p(z = 1/(x = x, Y = y)) =
 \begin{cases}
 0.9 & if (x,y) = (0,1) & w(1,0) \\
 0.1 & if (x,y) = (0,0) & w(1,1)
 \end{cases}$$

	11	Perfect xoe Probability	Noisy XOR Probability
XY	. 2	7 -	3)
0 0	0	0	0.1
0 1	1	1	0.9
10	1	1	0.9
I had been	0	. 0	0.1

$$P(X=1, Y=1/2=1) = P(X=1, Y=1, Z=1)$$

$$P(Z=1)$$

$$P(x=1, Y=1, Z=1) = P(Z=1/X=4, Y=1) \times P(X=1, Y=1)$$

= 0.1 × 0.5

=0.05

$$P(z=1) = \sum_{\substack{x=0,1\\y=0,1}} P(x=x,Y=y) \times P(z=1/x=x,Y=y)$$

=

-

Ú

D

$$P(2=1) = P(X=0, Y=0) \times P(2=1/X=0, Y=0)$$

$$= 100 \times 0.1 + 250 \times 0.9 + \frac{3}{2}50 \times 0.9$$

$$1000 \qquad 1000 \qquad 1000$$

+ 500 x0.1

1

0

(1) m (1,0)=(4,0) 1,000 = 0.4-2 (0-1)

$$P(X=1,Y=1/2=1) = 0.05 = 0.1190$$

Q3. Pla	cement x (280) 9 = (280) 9
P. Carlotte	$H \rightarrow W$. $T \rightarrow R$.
	$H \rightarrow W$. $T \rightarrow R$. $H \rightarrow W$. $T \rightarrow R$
	· ·
3 d	rawn 2 p / Y/e a
	All are red.
	(d) 9 x (d) 450) 9 5 = (det)
P (P2K	P(P2R) = P(P2R)
	$P(D3R) = P(P2R \cap D3R)$ $P(D3R)$
Pn the	box probability of 1st placement is red = 1/2 ly " 2nd place " = 1/2
Smile	Dex productives of 1 placement is rea = 12
2/18/1 (64)	19 11 = 12
	DIDIO 1 1201 1 1 4
	Ш Так элг Азия
- , П	the box, probability
	$2R = \frac{6}{9} \times \frac{1}{2} = \frac{1}{4}$
	$1R = 2[\frac{1}{2} \times \frac{1}{2}] = \frac{1}{2}$
	$OR = \frac{1}{2} \times \frac{1}{2} = \frac{1}{4}$
In Box	Probability of Red Drawing
	productivity of the practing
D 2R	product /1 product and some one
IR	1/2
OR	0.
	1
Drawing	Probabilities are same for all 3 drawings
sive tor	eplacements.
	생물을 받았다. 그렇게 살아가는 사람들은 살아보는 사람들이 되었다. 그는 사람들은 사람들은 사람들은 사람들은 사람들이 사람들이 살아보는 사람들이 살아보는 사람들이 살아보는 사람들이 살아보는 것이다.

$$P(P2R)D3R) = P(D3R / P2R) \times P(P2R)$$

$$= ||^{3} \times ||_{4}$$

$$= ||/4|.$$

$$P(D3R) = \sum_{1}^{3} P(D3R / 15) \times P(12)$$

$$= ||^{3} \times ||/4| + ||/2|^{3} \times ||/2| + O \times ||/4|$$

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WP

Q₄

a.
$$P(x/Y) = P(x,Y)$$

P(Y)

P(Y)

$$P(Y) = P(Y/X,Z) \cdot P(X/Z)$$

P(X/Y,Z) = ? $P(Y/X,Z) \cdot P(X/Z)$

P(Y/Z)

P(Y/Z)

P(Y/Z)

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P(Y/Z)

P(X₁,...,X_n) = $P(X_1,...,X_n,Y)$

P(X₁,...,X_n/Y) = $P(X_1,...,X_n,Y)$

P(Y)

P(Y)