CDA 6530 lecture 1

Monday, August 24, 2015 11:59 AM

$\{2, 3, 4, \cdots 12\}$

$\{(1,1), (1,2), (1,3) \cdots (6,6)\}$

$\{(2,1), (1,2), \}$ longer

A^c and A mutually exclusive, $P(A^c) + P(A) = P(A^c \cup A)$

$= P(S) = 1$

$$P(A \cup B) = P(A) + P(B) - P(A \cap B)$$

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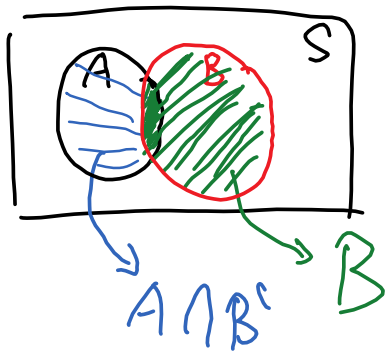

$$\hookrightarrow P((A \cap B^c) \cup B) = P(A \cap B^c) + P(B)$$

$$P(A \cap B^c) = P(A) - P(A \cap B) \quad ?$$

$$P(A) = P(A \cap B^c) + P(A \cap B) \quad \checkmark$$

B: { team 2 wins first 2 games }

A: { team2 wins the series }

team 1 vs. team 2

7 game series

$$P(A|B) = P(AB)/P(B)$$

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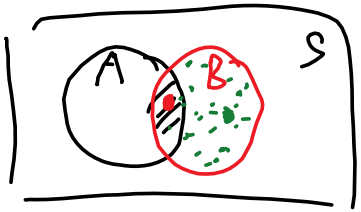

$$p(A) = \frac{\#\text{ points in } A}{\#\text{ in } S}$$

$$\frac{\#\text{ in } A \cap B}{\#S} \qquad \frac{\#\text{ in } B}{\#S}$$

$$p(A|B) = \frac{\#\text{ in } A \cap B}{\#\text{ in } B}$$

$$p(AB) = \frac{1000}{5000} \times 0.1 = 0.02$$

$$p(B) = \frac{10\% \times 1000 + 5\% \times 4000}{5000} = \frac{300}{5000} = 0.06$$

$$P(A|B) = \frac{P(AB)}{P(B)} = \frac{0.02}{0.06}$$

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