

$$P(\text{Pass})_{NW} = 3/5 = 0.6$$

$$P(\text{Fail})_{NW} = 2/5 = 0.4$$

$$\text{entropy class 1} = - (0.6 \times \log(0.6) + 0.4 \times \log(0.4)) = 0.918$$

$$P(\text{Pass})_W = 1/5 = 0.2$$

$$P(\text{Fail})_W = 2/5 = 0.4$$

$$\text{entropy class 1}_W = - (0.2 \times \log(0.2) + 0.4 \times \log(0.4)) = 0.811$$

$$0.918 - 0.811 = (3/5 \times 0.918) + (2/5 \times 0.811) = 0.861$$

$$\text{error class - entropy class working status} = 0.947 - 0.861 = 0.082$$

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