

Machine Learning übung 1

→ Monster vs. mouse

weil $p(M) + p(m) + p(e) = 1$

(before hearing the noise)

$$p(M|n) + p(m|n) + p(e|n) = 1$$

(after hearing the noise)

und $p(n, M) = p(n|M) \cdot p(M)$

Dann mit $p(M) = 1 \times 10^{-3} = 0.001$

$$p(m) = 0.5$$

$$p(e) = 1 - p(M) - p(m)$$

$$p(n|M) = 0.99$$

$$p(n|m) = 0.2$$

$$p(n|e) = 0.499$$

$$= 0.1$$

haben wir: $p(M|n) = \frac{p(n|M)p(M)}{p(n)}$

$$= \frac{p(n|M)p(M)}{p(n|M)p(M) + p(n|m)p(m) + p(n|e)p(e)}$$

$$= \frac{0.99 \times 0.001}{0.99 \times 0.001 + 0.2 \times 0.5 + 0.1 \times 0.499}$$

$$= \frac{0.00099}{0.00099 + 0.1 + 0.0499}$$

$$= \frac{0.00099}{0.15089}$$

$$\approx 0.0065610$$

$$= 6.56 \times 10^{-3}$$