pr cu ciuperci (4.2) rezolvată folosind reg. logistică

Calcularea funcției de log-verosimilitate condiționată pt setul de date de la pr. 4.2 (ciuperci), cf formulei de la pr 2.13.a

pr 2.13 (173); m = 8 în pr 4.2

$$\ell(\underset{w_0}{w_1, w_2, w_3, w_4}) = \sum_{i=1}^{m} y^{(i)} \ln \sigma(w \cdot x^{(i)}) + (1-y^{(i)}) \ln(1-\sigma(w \cdot x^{(i)}))$$

$\overset{4.2}{=}$ $1 \cdot \ln \sigma(w_1 x_1^{(1)} + w_0) +$ // A

$+ 1 \cdot \ln \sigma(w_1 x_1^{(2)} + w_3 x_3^{(2)} + w_0) +$ // B

$+ 1 \cdot \ln \sigma(w_2 x_2^{(3)} + w_4 x_4^{(3)} + w_0) +$ // C

$+ (1-0) \cdot \ln(1 - \sigma(w_4 x_4^{(4)} + w_0))$ // D

$+ (1-0) \cdot \ln(1 - \sigma(w_1 x_1^{(5)} + w_2 x_2^{(5)} + w_3 x_3^{(5)} + w_0))$ // E

$+ (1-0) \cdot \ln(1 - \sigma(w_1 x_1^{(6)} + w_3 x_3^{(6)} + w_4 x_4^{(6)} + w_0))$ // F

$+ (1-0) \cdot \ln(1 - \sigma(w_1 x_1^{(7)} + w_4 x_4^{(7)} + w_0))$ // G

$+ (1-0) \cdot \ln(1 - \sigma(w_2 x_2^{(8)} + w_0))$ // H

$$= \underset{A}{\ln \sigma(w_1+w_0)} + \underset{B}{\ln \sigma(w_1+w_3+w_0)} + \underset{C}{\ln \sigma(w_2+w_4+w_0)} +$$

$$+ \underset{D}{\ln(1-\sigma(w_4+w_0))} + \underset{E}{\ln(1-\sigma(w_1+w_2+w_3+w_0))} + \underset{F}{\ln(1-\sigma(w_1+w_3+w_4+w_0))} +$$

$$+ \underset{G}{\ln(1-\sigma(w_1+w_4+w_0))} + \underset{H}{\ln(1-\sigma(w_2+w_0))}$$