Exple: $c = 3$

$k = 1$

$$\mu_{31} = \frac{1}{\left(\frac{d_{31}}{d_{31}}\right)^2 + \left(\frac{d_{31}}{d_{32}}\right)^2}$$

$$d_{31} = \sqrt{0 + 4^2} = 4$$

$$d_{32} = \sqrt{0 + 2^2} = \sqrt{4} = 2$$

$$\mu_{31} = \frac{1}{1^2 + \left(\frac{4}{2}\right)^2} = \frac{1}{1+4} = 0.2$$

$$\Rightarrow \mu_{32} = 0.8$$

$$\Rightarrow Jm = \sum_{i=1}^{6} \sum_{k=1}^{2} (\mu_{ik})^2 \|x_i - G_k\|^2 = 16.8867$$

$$\Rightarrow G_1 = \mu_{11}^2 X_1 + \mu_{21}^2 X_2 + \mu_{31}^2 X_3 + \mu_{41}^2 X_4 + \mu_{51}^2 X_5 + \mu_{61}^2 X_6$$

$$G_1 = \begin{bmatrix} (0.815)^2 \times (-2) + (0.1112)^2 \times (-2) + \dots + (0.2467)^2 \times (1) \\ (0.815)^2 \times (3) + (0.1112)^2 \times (1) + \dots + (0.2467)^2 \times (0) \end{bmatrix}$$

$$\Rightarrow G_1 = \begin{pmatrix} -1.0144 \\ 1.6853 \end{pmatrix}$$

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