

$$A = \begin{pmatrix} - & C & G & C & G \\ A & C & G & C & - \\ G & C & G & A & - \end{pmatrix}$$

$$\pi_{1,2}(A) = \begin{pmatrix} - & C & G & C & G \\ A & C & G & C & - \end{pmatrix}$$

$$\pi_{1,3}(A) = \begin{pmatrix} - & C & G & C & G \\ G & C & G & A & - \end{pmatrix}$$

$$\pi_{2,3}(A) = \begin{pmatrix} A & C & G & C \\ G & C & G & A \end{pmatrix}$$

$$A = \begin{pmatrix} - & C & G & C & G \\ A & C & G & C & - \\ G & C & G & A & - \end{pmatrix}$$

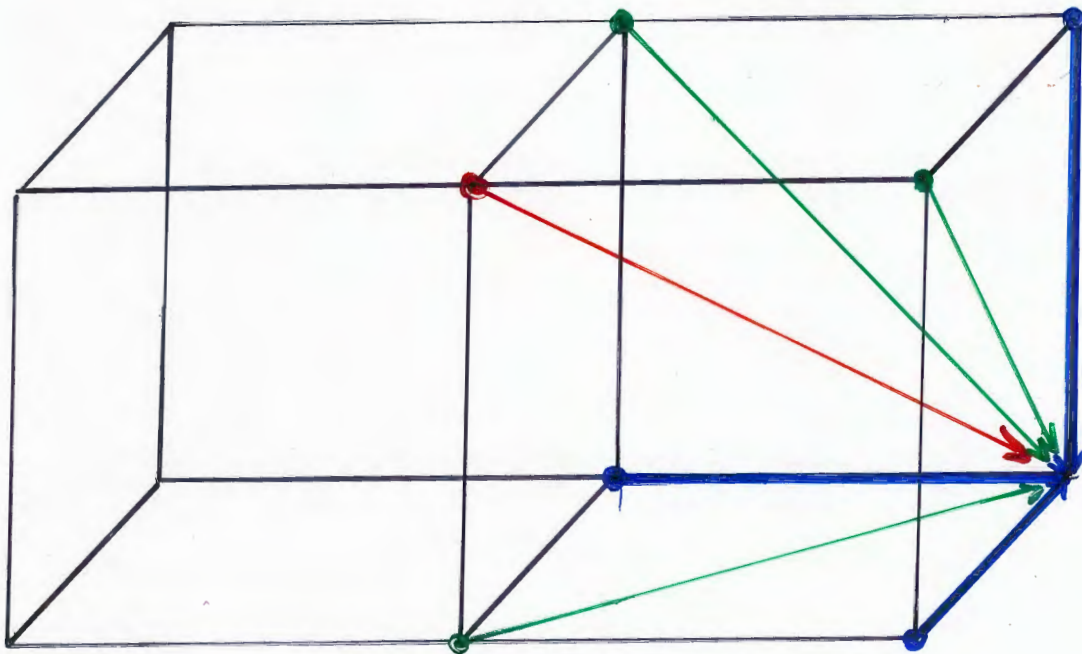
$$\pi_{1,2}(A) = \begin{pmatrix} - & C & G & C & G \\ A & C & G & C & - \end{pmatrix} \quad \text{Kosten 2}$$

$$\pi_{1,3}(A) = \begin{pmatrix} - & C & G & C & G \\ G & C & G & A & - \end{pmatrix} \quad \text{Kosten 3}$$

$$\pi_{2,3}(A) = \begin{pmatrix} A & C & G & C \\ G & C & G & A \end{pmatrix} \quad \text{Kosten 2}$$

$$D_{SP}(A) = D_2(\pi_{1,2}(A)) + \dots + D_2(\pi_{2,3}(A))$$

$$= 2 + 3 + 2 = 7$$



$$D[i_1, i_2, i_3] = \min \left\{ \begin{array}{l} D[i_1-1, i_2, i_3] + \text{Dsp}(s_1[i_1], -, -) \\ D[i_1, i_2-1, i_3] + \text{Dsp}(-, s_2[i_2], -) \\ D[i_1, i_2, i_3-1] + \text{Dsp}(-, -, s_3[i_3]) \\ D[i_1-1, i_2-1, i_3] + \text{Dsp}(s_1[i_1], s_2[i_2], -) \\ D[i_1-1, i_2, i_3-1] + \text{Dsp}(s_1[i_1], -, s_3[i_3]) \\ D[i_1, i_2-1, i_3-1] + \text{Dsp}(-, s_2[i_2], s_3[i_3]) \\ D[i_1-1, i_2-1, i_3-1] + \text{Dsp}(s_1[i_1], s_2[i_2], s_3[i_3]) \end{array} \right.$$