

We know that the cross product of two vectors is orthogonal to both. So we calculate

$$\begin{vmatrix} \mathbf{i} & \mathbf{j} & \mathbf{k} \\ 1 & 1 & 1 \\ 6 & 0 & 1 \end{vmatrix} = \begin{vmatrix} 1 & 1 \\ 0 & 1 \end{vmatrix} \mathbf{i} - \begin{vmatrix} 1 & 1 \\ 6 & 1 \end{vmatrix} \mathbf{j} + \begin{vmatrix} 1 & 1 \\ 6 & 0 \end{vmatrix} \mathbf{k} = \mathbf{i} + 5\mathbf{j} - 6\mathbf{k}$$

Thus, two unit vectors orthogonal to both are $\pm \frac{1}{\sqrt{62}} \langle 1, 5, -6 \rangle$, that is, $\left\langle \frac{1}{\sqrt{62}}, \frac{5}{\sqrt{62}}, -\frac{6}{\sqrt{62}} \right\rangle$ and $\left\langle -\frac{1}{\sqrt{62}}, -\frac{5}{\sqrt{62}}, \frac{6}{\sqrt{62}} \right\rangle$.