from linearalgebra import det

from trigonometry import atan2

$$\boldsymbol{a} = \boldsymbol{v}_i - \boldsymbol{p}$$

$$\boldsymbol{b} = \boldsymbol{v}_j - \boldsymbol{p}$$

$$\boldsymbol{c} = \boldsymbol{v}_k - \boldsymbol{p}$$

$$a = \|\boldsymbol{a}\|_2$$

$$b = \|\boldsymbol{b}\|_2$$

$$c = \|\boldsymbol{c}\|_2$$

$$\frac{atan2\left(det\left(\begin{bmatrix}\boldsymbol{a} & \boldsymbol{b} & \boldsymbol{c}\end{bmatrix}\right), \left(abc + (\boldsymbol{a} \cdot \boldsymbol{b})\, c + (\boldsymbol{b} \cdot \boldsymbol{c})\, a + (\boldsymbol{c} \cdot \boldsymbol{a})\, b\right)\right)}{2\pi}$$

where

$$\boldsymbol{v}_i \in \mathbb{R}^3$$

$$\boldsymbol{v}_j \in \mathbb{R}^3$$

$$\boldsymbol{v}_k \in \mathbb{R}^3$$

$$\boldsymbol{p} \in \mathbb{R}^3$$