$$\min_{u \in \mathbb{R}^6} \quad u^T \left(\sum_i \begin{bmatrix} x_i \times \hat{n_i} \\ \hat{n_i} \end{bmatrix} \begin{bmatrix} (x_i \times \hat{n_i})^T & \hat{n_i}^T \end{bmatrix} \right) u - 2u^T \left(\sum_i \begin{bmatrix} x_i \times \hat{n_i} \\ \hat{n_i} \end{bmatrix} \hat{n_i}^T (p_i - x_i) \right) + \sum_i (p_i - x_i)^T \hat{n_i} \hat{n_i}^T (p_i - x_i)$$

where

$x_i \in \mathbb{R}^3$
$\hat{n_i} \in \mathbb{R}^3$
$p_i \in \mathbb{R}^3$