Based on:

https://www.researchgate.net/publication/276493313_RSSI-based_Algorithm_for_Indoor_Localization

Distance between pi and device:

$$d_i^2 = (x_i - x_0)^2 + (y_i - y_0)^2 + (z_i - z_0)^2$$

⇨ $$d_i^2 = x_i^2 + y_i^2 + z_i^2 - 2x_ix_0 - 2y_iy_0 - 2z_iz_0 + x_0^2 + y_0^2 + z_0^2$$

Where x_i, y_i, and z_i are coordinate of pi number i

x_0, y_0 and z_0 are coordinate of the device

Suppose distances between the device and 3 pis are known:

$$d_1^2 = x_1^2 + y_1^2 + z_1^2 - 2x_1x_0 - 2y_1y_0 - 2z_1z_0 + x_0^2 + y_0^2 + z_0^2 \quad (1)$$

$$d_2^2 = x_2^2 + y_2^2 + z_2^2 - 2x_2x_0 - 2y_2y_0 - 2z_2z_0 + x_0^2 + y_0^2 + z_0^2 \quad (2)$$

$$d_3^2 = x_3^2 + y_3^2 + z_3^2 - 2x_3x_0 - 2y_3y_0 - 2z_3z_0 + x_0^2 + y_0^2 + z_0^2 \quad (3)$$

Subtract (2) from (1):

$$d_1^2 - d_2^2 = x_1^2 + y_1^2 + z_1^2 - x_2^2 - y_2^2 - z_2^2 - 2(x_1 - x_2)x_0 - 2(y_1 - y_2)y_0 - 2(z_1 - z_2)z_0$$

⇨ $2(x_1 - x_2)x_0 + 2(y_1 - y_2)y_0 + 2(z_1 - z_2)z_0 = x_1^2 + y_1^2 + z_1^2 - x_2^2 - y_2^2 - z_2^2 - d_1^2 + d_2^2$

Let $a_{12} = 2(x_1 - x_2)$

$b_{12} = 2(y_1 - y_2)$

$c_{12} = 2(z_1 - z_2)$

$e_{12} = x_1^2 + y_1^2 + z_1^2 - x_2^2 - y_2^2 - z_2^2 - d_1^2 + d_2^2$

⇨ $a_{12}x_0 + b_{12}y_0 + c_{12}z_0 = e_{12}$ (4)

Similarly, subtract (3) from (2):

$a_{23}x_0 + b_{23}y_0 + c_{23}z_0 = e_{23}$ (5)

subtract (1) from (3):

$a_{31}x_0 + b_{31}y_0 + c_{31}z_0 = e_{31}$ (6)

The coordinate of device can be solved using Cramer's Rule on (4), (5) and (6)