The Algorithm used to compute the robot's postion using trilateration is as follows:

- Let (x_i, y_i, r_i) be the information about the ith Landmark. Here (x_i, y_i) is the position of the ith Landmark in the global reference frame and r_i is the instantaneous distance of the ith Landmark from the Robot.

- The constraints laid out by each of the distance measurements are circular.

$$(x - x_1)^2 + (y - y_1)^2 = R_1^2$$
$$(x - x_2)^2 + (y - y_2)^2 = R_2^2$$
$$(x - x_3)^2 + (y - y_3)^2 = R_3^2$$

- The formula for computing the Robot's position - (x, y) is as follows:

$$x = \frac{CE - FB}{EA - BD}$$

$$y = \frac{CD - AF}{BD - AE}$$

where,

$$A = 2x_2 - 2x_1$$
$$B = 2y_2 - 2y_1$$
$$C = R_1^2 - R_2^2 - x_1^2 + x_2^2 - y_1^2 + y_2^2$$
$$D = 2x_3 - 2x_2$$
$$E = 2y_3 - 2y_2$$
$$F = R_2^2 - R_3^2 - x_2^2 + x_3^2 - y_2^2 + y_3^2$$