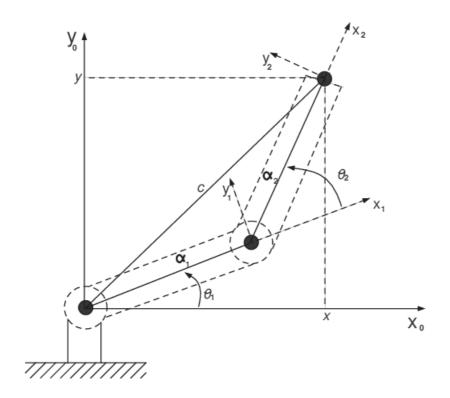
## Two-link planar robot



https://www.researchgate.net/figure/Kinematic-Diagram-a-Two-Link-Planar-Manipulator fig1 283377443

## **Forward Kinematic**

$$egin{cases} x = a_1\cos heta_1 + a_2\cos( heta_1 + heta_2) \ y = a_1\sin heta_1 + a_2\sin( heta_1 + heta_2) \end{cases}$$

## **Inverse Kinematic**

$$egin{cases} heta_2 = an^{-1} rac{\pm \sqrt{1-\cos heta_2^2}}{\cos heta_2} \ heta_1 = an^{-1} (y_2/x_2) - an^{-1} (rac{a_2\sin heta_2}{a_1+a_2\cos heta_2}) \end{cases}$$

## Reference

Two-link planar robot 1

 $\underline{\text{https://robotacademy.net.au/lesson/inverse-kinematics-for-a-2-joint-robot-arm-using-geometry/}$ 

Two-link planar robot 2