Lecture 1

INTRO TO ROBOTICS

ROBOTICS = STUDY OF Robots

ROBOTS : ?

ROBOT ← m/c that does work for you.

"automated m/c"

1925 ← Capek

Capek
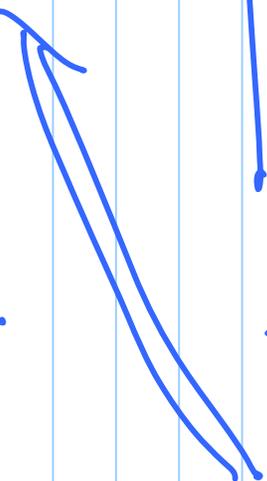
① Swim clockwork mechanism

historical page :——→ ② "chem m/c"

ROBOT : programmable mechanical devices

arm / manipulator arms

mobile robots

"intelligent connection from perception to action"

Patrick Winston

AI guy

@ MIT

Brief overview of the course:

Robot for this course:

A mechanical manipulator:

"Open serial kinematic chain"

kinematic chain ⇒ series of links (rigid bodies)
                   joined together at
                   joints. joints allow
                   relative motion between
                   (end-effector) links.

open : one end of chain is free to move.
       the other end would be fixed
       (base)

serial: links are in "series".

Base

joint 1

link 1

joint 2

link 2

joint 3

link 3

end-effector (gripper)
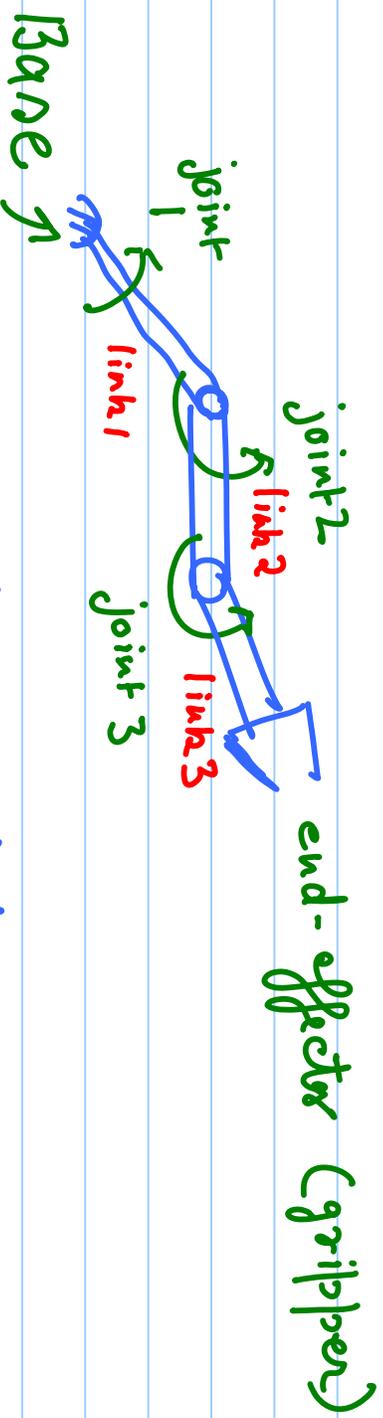
A 3-link robot arm
(open serial kinematic chain)