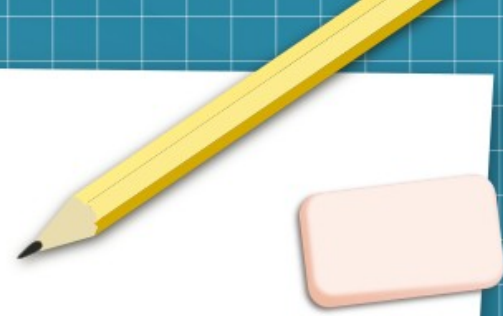




# Robotic Arm Kinematics

## Point Swarm Optimization (PSO)

# Methods



- Forward Kinematics
  - Find position of end effector based on joint parameters
- Inverse Kinematics
  - Find joint parameters for specified end effector position
  - Geometric solutions for simple systems
  - Multiple/Infinite solutions or No solutions
- Numerical Kinematics
  - Solve inverse kinematics numerically for complex systems
  - Various approaches

# Inverse Kinematics with *PSO*

- Well defined procedure following from the work presented in [1]
- Current Plan
  - Parallelize kinematic calculations
  - Parallelize fitness evaluation
- Stretch Goal
  - Find multiple solutions by introducing perturbations

