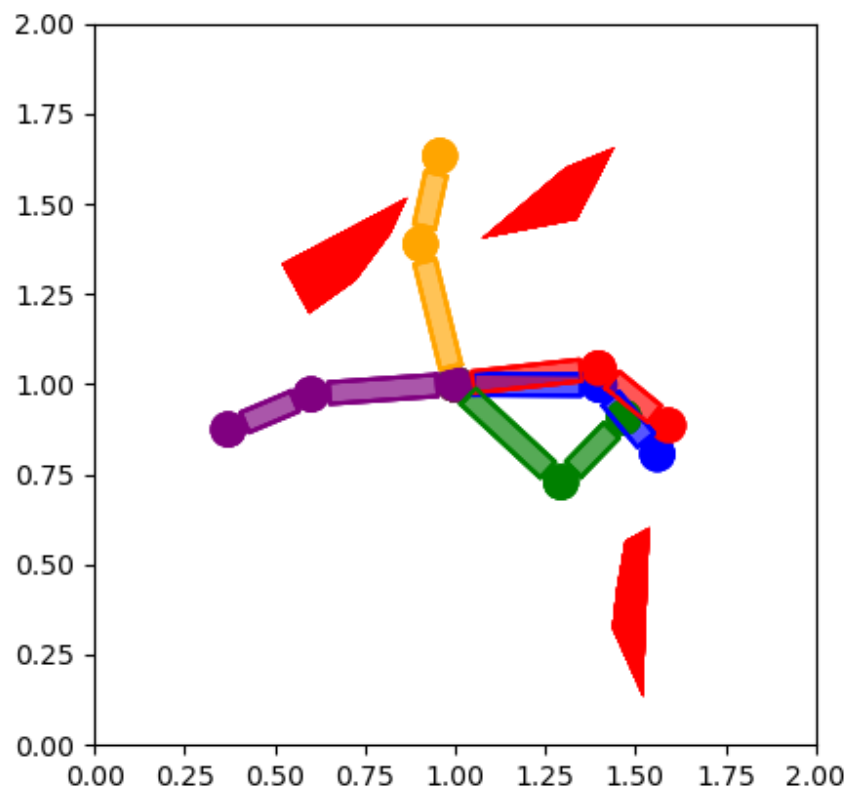


1.1 Sampling random collision free configurations

The NLinkArm class models the robot arm, utilizing transformation matrices to update joint positions based on given joint angles. Collision checking is facilitated by creating rectangles representing the arm links and verifying their intersection with polygons in the provided environment map. The `collision_free_config` function randomly generates joint angles, repeating the process until a collision-free configuration is achieved. The script visualizes the robot arm and environment using matplotlib. The collision avoidance strategy involves adjusting the rectangles representing the links and checking for collisions with the polygons.



1.2 Nearest neighbors with linear search approach