

HW1 (Due Next Tuesday 12AM)

- How to generate uniform, perpendicular, attractive, repulse, tangential forces for a robot and obstacles with known positions? (Provide related mathematical formulas)
 - Please simulate the above force fields, and plot the vector force fields. (provide codes and plots of force fields)
 - Please simulate the motions of a robot for given those force fields. (Provide codes and Plots of simulation results)
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- Extra Credit on Next Page

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- (**Extra Credit** for undergraduate students and **required for graduate students**) Simulate a robot can reach the goal without sticking into the a local trap. (Provide codes and simulation results with parameter optimization and analysis)

