2 handouts: slides, asst 3
EOLQs

Motion Planning
RRTs
Motion Planning
Observability: complete, partial, hidden
State: discrete, continuous
Actions: deterministic, stochastic, discrete, continuous
Nature: static, deterministic, stochastic
Interaction: one decision, sequential
Time: static/off-line, on-line, discrete, continuous
Percepts: discrete, continuous, uncertain
Others: solo, cooperative, competitive
Motion Planning Problems

- geometry
- kinematics
- dynamics
- hybrid state
- steering: closed form, controller, random (raw simulator)
- grid pathfinding: basic discretization
- visibility graphs: clever discretization

single- vs multiple-query

- PRM: discretization by sampling

non-point robots: eg, 7-DOF arms
what if you don’t have infinite acceleration?

- Heuristic search: lattice, grid
- RRT
Motion Planning
- Problems
- Motion Planning
- Geometric
- Dynamics

Break

- asst2
- asst3
- projects
RRTs

- RRT
- RRT*
- Others
- EOLQs
initialize the tree with the initial state
until the tree reaches the goal:
  sample a random state
  find the nearest state in the tree
  extend from that state toward the sample

(Lavalle video)
goal bias
smoothing
bidirectional
for all states near new state
  if path to new through near is better
    rewire using that path
for all states near new state
  if path to near through new is better
    rewire using that path

(Karaman video)
Others

- BIT*
- Potential fields
- Skeletonization
- Trajectory optimization
Please write down the most pressing question you have about the course material covered so far and put it in the box on your way out.

Thanks!