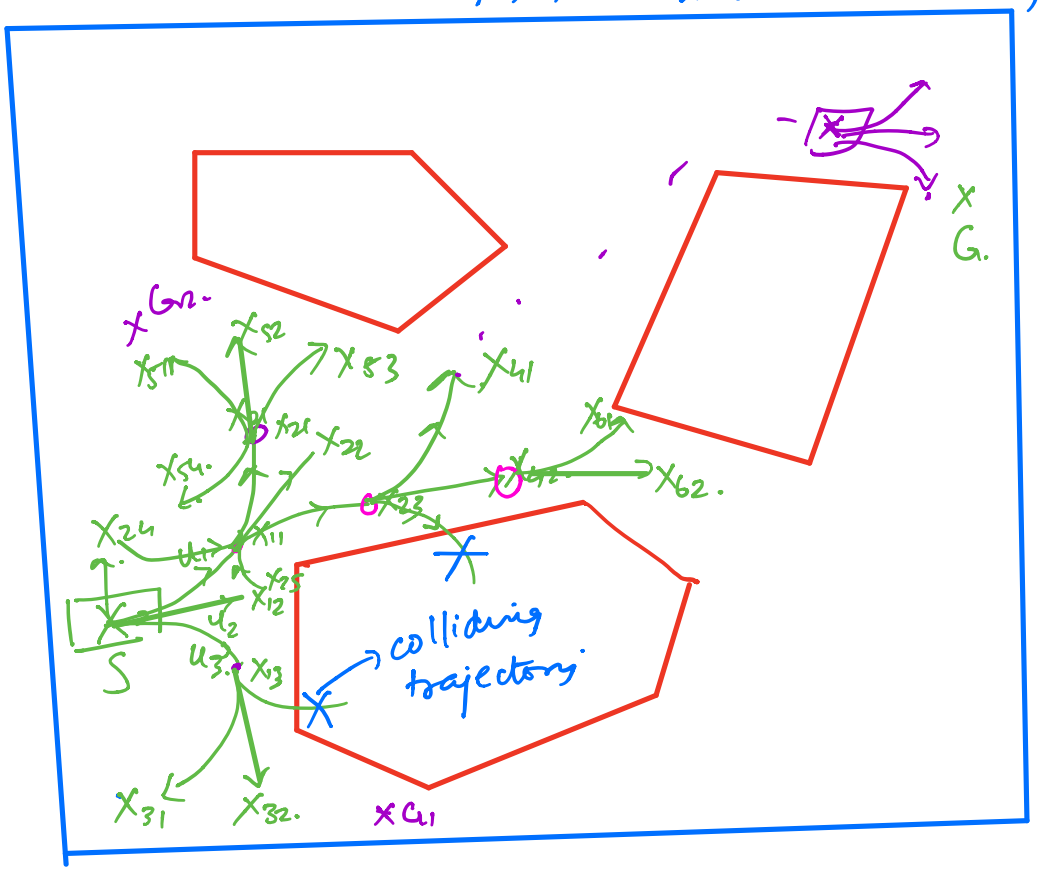
RRT → bi directional RRT, RRT*



S, G → start and goal configuration

$G_1, G_2, \ldots$ → random goals

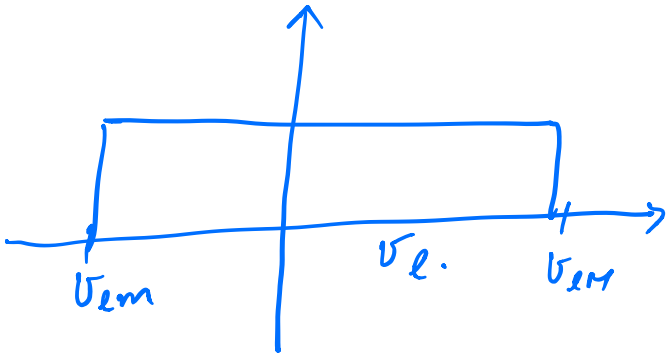
U → set of feasible controls, we can discretize and represent it as

$$U = [[v_{l1}, v_{r1}], \ldots, [v_{ln}, v_{rn}]]$$

where each v_i is s.t

$v_m \leq v_i \leq v_M$

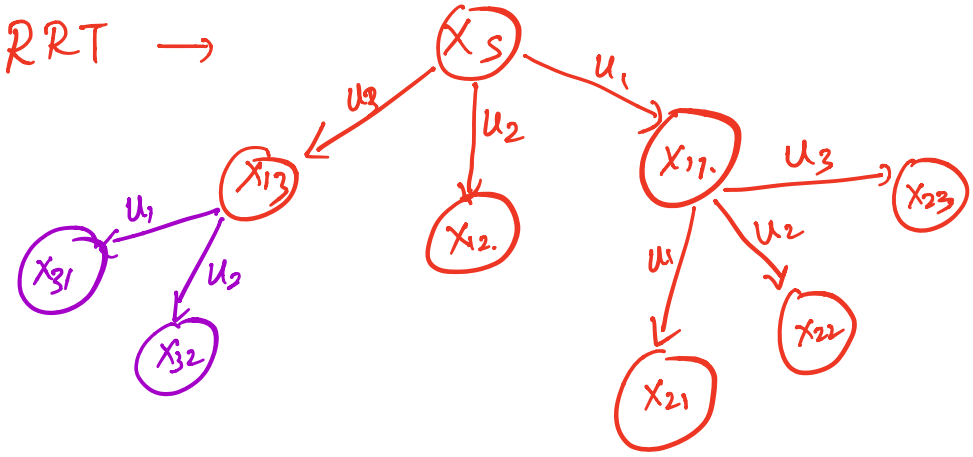
One can also think of this set as a distribution such as

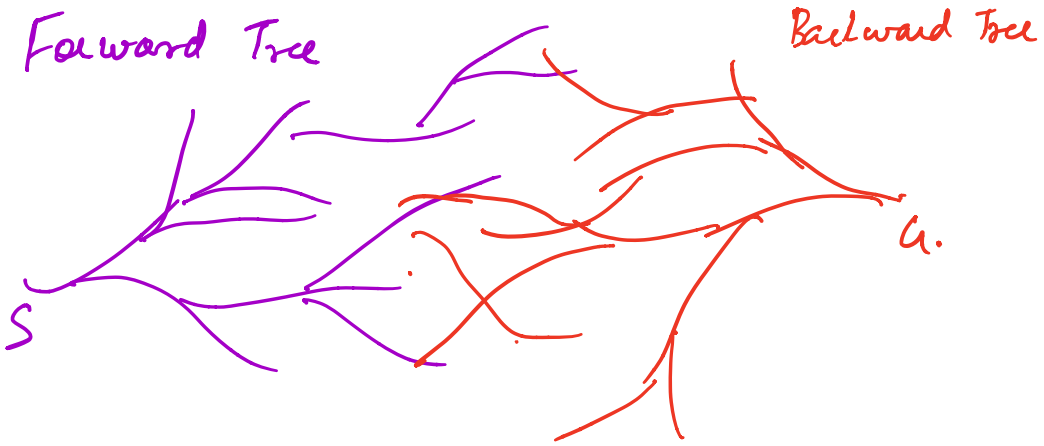


$S \rightarrow \begin{bmatrix} x_s \\ y_s \\ \theta_s \end{bmatrix}$ $\quad G \rightarrow \begin{bmatrix} x_g \\ y_g \end{bmatrix}$

$X_{11} = f(X_s, u_1, dt) \rightarrow$ differential drive kinematics

RRT $\rightarrow$




Forward Tree
Backward Tree
s
a.