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RoadMap Based Robot Motion Planning

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PROJECT ABSTRACT

In this work , we attempt to learn robot trajectories that can be generalised to unknown environments.We use vision based methods to learn an effective path from source configuration to destination using roadmap based approach.We capture images of random robot configuration(Y) with corresponding joint parameters(θ).Both data are seperately processed and are coupled to learn an effective map $Y \rightarrow \theta$ using Gaussian Process

Regression.Dimensionality Reduction Techniques including Random Projections and Gaussian Process Latent Variable Model are implemented to form a lower dimensional embedding of image feature space to improve the mapping.Statistical evaluation of generated joint parameters against ground truth data for path generation match favourably.