机器学习引论作业九

何长鸿 2016141482154

1 Question1

Q:The definition of manifold?

A:In mathematics, a manifold is a topological space that locally resembles Euclidean space near each point. More precisely, each point of an n-dimensional manifold has a neighbourhood that is homeomorphic to the Euclidean space of dimension n. In this more precise terminology, a manifold is referred to as an n-manifold.

2 Question2

Q:What means Locally, Linear and embedding?

A: Locally means for each data point x_i, finding its k nearest neighbors. Linear means compute the linear reconstruction coefficient W_{ij}. Embedding means using W as an invariance for DR by embedding it into the manifold.