

Active Learning on Graph Edge Space

Proposed by :

Dionysis Manousakas
University of Cambridge

dm754@cam.ac.uk

Abstract

There are several applications where we want to model a stochastic processes evolving on the edges of a large graph (e.g. traffic over a transportation network). This can often be reduced to a regression problem formulation (we aim to predict unseen edge flows over the transportation network leveraging a number of known edge flows). However acquiring related labels can be expensive or unrealistic (in the traffic monitoring example requires deploying and maintaining a large number of sensors).

In this project we aim to seek for an optimal strategy that allows us to sequentially acquire information from the graph edges in order to efficiently solve our learning problem in constrained environments.

Keywords

semi-supervised learning, submodularity, adaptive optimization, stochastic optimization, partial observability, graph signal processing