

RL-based robots for seismic sensor deployment

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Abstract

The integration of reinforcement learning (RL) and robotics has been successfully applied in various industrial settings. One of these settings involves the deployment of seismic sensors over wide oil and gas fields. The sensor deployment problem can be formulated as a challenging optimization problem where Markov decision processes (MDPs) can be efficiently used. Our RL-based robot can deploy seismic sensors over soft and rough areas covering wide oil/gas fields. Our prototype robot resulted from an innovation work that is currently protected under two published US patents [1, 2]. A demonstration of the robot capabilities can be found in [3, 4].

Biography

Ghouthi L has completed his PhD in Computer Science from Queen's University of Belfast, UK in December 2005. He is an Associate Professor at Prince Sultan University, Saudi Arabia. He has over 100 publications and holds 28 US Patents. Dr. Ghouthi has been serving as an editorial board member of reputed Journals and chaired an international conference on Machine Learning and Data Science.

