Plan Overview

A Data Management Plan created using DeiC DMP

Title: Hardness of Approximation: Unconditional lower bounds with a focus on problems in submodular optimization and new perspectives on classical hardness

Creator: Krishna Narayanan

Principal Investigator: Krishna Narayanan

Contributor: Krishna Narayanan

Affiliation: Syddansk Universitet / University of Southern Denmark

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ORCID iD: 0000-0001-5711-3549

Project abstract:

This PhD project forms part of the ERC project Parameterized Algorithms and Polyhedra. It studies the limits of efficient approximation algorithms in submodular optimization, with a particular focus on submodular orienteering and related problems.

The project's immediate principal research direction is towards establishing unconditional lower bounds in the value-oracle model in submodular optimization, with an initial focus on submodular orienteering, and subsequently on other related problems, such as submodular markov decision processes, polymatroid steiner tree and others. A secondary direction will be to revisit classical hardness-of-approximation results with the aim of developing conceptually simpler proofs. We will also explore related questions within approximation and parameterized algorithms.

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Hardness of Approximation: Unconditional lower bounds with a focus on problems in submodular optimization and new perspectives on classical hardness

Data Collection

What data will you collect or create?

In Theoretical Computer Science, which is my field of work, research contributions take the form of mathematical arguments and proofs. Therefore, questions of data collection or management are not pertinent to our line of work.

How will the data be collected or created?

Given that our line of work is theoretical with mathematical arguments and proofs, we do not create or collect data.

Documentation and Metadata

What documentation and metadata will accompany the data?

Since we don't collect or use data, this is not applicable to our field of work.

Ethics and Legal Compliance

How will you manage any ethical issues?

We do not have any ethical considerations with regard to data since we do not use any in our field of work.

How will you manage copyright and Intellectual Property Rights (IPR) issues?

Since we do not collect/create data, we do not face the aforementioned issues.

Storage and Backup

How will the data be stored and backed up during the research?

Since we do not collect/create data, we do not face the aforementioned issues.

How will you manage access and security?

Since we do not collect/create data, we do not face the aforementioned issues.

Selection and Preservation

Which data are of long-term value and should be retained, shared, and/or preserved?

Since we do not collect/create data, this is inapplicable to our plan.

What is the long-term preservation plan for the dataset?

Since we do not collect/create data, we do not require a long-term preservation plan.

Data Sharing

How will you share the data?

Since we do not collect/create data, this is inapplicable to our plan.

Are any restrictions on data sharing required?

Since we do not collect/create data, this is inapplicable to our plan.

Responsibilities and Resources

Who will be responsible for data management?

Since we do not collect/create data, this is inapplicable to our plan.

What resources will you require to deliver your plan?

Since we do not collect/create data, we do not require any dedicated resources.