Plan Overview

A Data Management Plan created using DMPonline

Title: FR fellowship: Highway intelligent traffic control system based on vehicle-road coordination and multi-agent technology

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Funder: European Commission

Template: Horizon 2020 Template

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Project abstract:

Increasing traffic congestion around the world leads to a series of adverse effects on the public travel and the development of society, such as travel delay, vehicle fuel consumption and environmental pollution. In recent years, autonomous driving has become an increasingly practical technology leading to new challenges and opportunities for traffic management on highways. This proposal expects to generate new knowledge in highway traffic management by developing a novel multi-agent control system that adopts reinforcement learning and heuristic approaches. The system aims to achieve the global optimization of the highway region, alleviate traffic jams, reduce travel times, and then increase traffic management efficiency by control of traffic instructions and optimal travel time. The system can be applied in various scenarios, such as only autonomous vehicles on the highways, both autonomous vehicles and human-driven vehicles on the highways or only human-driven vehicles on the highways. Reinforcement learning has great potential as a tool in traffic instruments control, while the existing algorithms have some drawbacks due to the cooperative control between agents and heuristic approaches have been successfully applied to optimization problems as well as cooperative optimization. The outcomes of this proposal will produce an intelligent and partial controllability multi-agent system that provides significant social, economic, and environmental benefits through optimal control strategies and effective management schemes

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Copyright information:

FR fellowship: Highway intelligent traffic control system based on vehicle-road coordination and multi-agent technology - Initial DMP

1. Data summary

Provide a summary of the data addressing the following issues:

- **State the purpose of the data collection/generation**
- **Explain the relation to the objectives of the project**
- **Specify the types and formats of data generated/collected**
- **Specify if existing data is being re-used (if any)**
- **Specify the origin of the data**
- **State the expected size of the data (if known)**
- **Outline the data utility: to whom will it be useful**

I am not using any real-data or other sources of data, all are synthesis data generated by myself.

2. FAIR data

2.1 Making data findable, including provisions for metadata:

- **Outline the discoverability of data (metadata provision)**
- **Outline the identifiability of data and refer to standard identification mechanism. Do you make use of persistent and unique identifiers such as Digital Object Identifiers?**
- **Outline naming conventions used**
- **Outline the approach towards search keyword**
- **Outline the approach for clear versioning**
- **Specify standards for metadata creation (if any). If there are no standards in your discipline describe what metadata will be created and how**

All are synthesis data generated by myself.

2.2 Making data openly accessible:

- **Specify which data will be made openly available? If some data is kept closed provide rationale for doing so**
- **Specify how the data will be made available**
- **Specify what methods or software tools are needed to access the data? Is documentation about the software needed to access the data included? Is it possible to include the relevant software (e.g. in open source code)?**
- **Specify where the data and associated metadata, documentation and code are deposited**
- **Specify how access will be provided in case there are any restrictions**

All describe in the published paper.

2.3 Making data interoperable:

- **Assess the interoperability of your data. Specify what data and metadata vocabularies, standards or methodologies you will follow to facilitate interoperability.**
- **Specify whether you will be using standard vocabulary for all data types present in your data set, to allow inter-disciplinary interoperability? If not, will you provide mapping to more commonly used ontologies?**

Not applied.

2.4 Increase data re-use (through clarifying licenses):

- **Specify how the data will be licenced to permit the widest reuse possible**
- **Specify when the data will be made available for re-use. If applicable, specify why and for what period a data embargo is needed**
- **Specify whether the data produced and/or used in the project is useable by third parties, in particular after the end of the project? If the re-use of some data is restricted, explain why**
- **Describe data quality assurance processes**
- **Specify the length of time for which the data will remain re-usable**

Not applied.

3. Allocation of resources

Explain the allocation of resources, addressing the following issues:

- **Estimate the costs for making your data FAIR. Describe how you intend to cover these costs**
- **Clearly identify responsibilities for data management in your project**
- **Describe costs and potential value of long term preservation**

Not applied.

4. Data security

Address data recovery as well as secure storage and transfer of sensitive data

Not applied.

5. Ethical aspects

To be covered in the context of the ethics review, ethics section of DoA and ethics deliverables. Include references and related technical aspects if not covered by the former

Not applied.

6. Other

Refer to other national/funder/sectorial/departmental procedures for data management that you are using (if any)

N/A.

FR fellowship: Highway intelligent traffic control system based on vehicle-road coordination and multi-agent technology - Detailed DMP

1. Data summary

State the purpose of the data collection/generation

Synthesis data generated in simulation or based on benchmarking open-source data for testing the proposed algorithm.

Explain the relation to the objectives of the project

My project is in methodology level, so synthesis data to evaluate the performance of the developed algorithms.

Specify the types and formats of data generated/collected

Data generated as a road map, with benchmarking with Travel Thief Problem.

Specify if existing data is being re-used (if any)

Not applied.

Specify the origin of the data

Solomon benchmark

State the expected size of the data (if known)

Not applied.

Outline the data utility: to whom will it be useful

Only researchers who investigate the TTP problems.

2.1 Making data findable, including provisions for metadata [FAIR data]

Outline the discoverability of data (metadata provision)

open source.

Outline the identifiability of data and refer to standard identification mechanism. Do you make use of persistent and unique identifiers such as Digital Object Identifiers?

Not applied.

Outline naming conventions used

Solomon benchmark

Outline the approach towards search keyword

NP-hard problem benchamrk

Outline the approach for clear versioning

Not applied.

Specify standards for metadata creation (if any). If there are no standards in your discipline describe what metadata will be created and how

Not applied.

2.2 Making data openly accessible [FAIR data]

Specify which data will be made openly available? If some data is kept closed provide rationale for doing so

All open source as described in paper.

Specify how the data will be made available

Online.

Specify what methods or software tools are needed to access the data? Is documentation about the software needed to access the data included? Is it possible to include the relevant software (e.g. in open source code)?

Not applied.

Specify where the data and associated metadata, documentation and code are deposited

https://www.sintef.no/projectweb/top/vrptw/solomon-benchmark/

Specify how access will be provided in case there are any restrictions

open source

2.3 Making data interoperable [FAIR data]

Assess the interoperability of your data. Specify what data and metadata vocabularies, standards or methodologies you will follow to facilitate interoperability.

not applied.

Specify whether you will be using standard vocabulary for all data types present in your data set, to allow inter-disciplinary interoperability? If not, will you provide mapping to more commonly used ontologies?

not apply.

2.4 Increase data re-use (through clarifying licenses) [FAIR data]

Specify how the data will be licenced to permit the widest reuse possible

not applied.

Specify when the data will be made available for re-use. If applicable, specify why and for

what period a data embargo is needed

not applied.

Specify whether the data produced and/or used in the project is useable by third parties, in particular after the end of the project? If the re-use of some data is restricted, explain why

not applied.

Describe data quality assurance processes

not applied.

Specify the length of time for which the data will remain re-usable

not applied.

3. Allocation of resources

Estimate the costs for making your data FAIR. Describe how you intend to cover these costs

0

Clearly identify responsibilities for data management in your project

not applied.

Describe costs and potential value of long term preservation

0

4. Data security

Address data recovery as well as secure storage and transfer of sensitive data

not applied.

5. Ethical aspects

To be covered in the context of the ethics review, ethics section of DoA and ethics deliverables. Include references and related technical aspects if not covered by the former

not applied.

6. Other

Refer to other national/funder/sectorial/departmental procedures for data management that you are using (if any)

not applied.

FR fellowship: Highway intelligent traffic control system based on vehicle-road coordination and multi-agent technology - Final review DMP

1. Data summary

State the purpose of the data collection/generation

to evaluate the proposed method.

Explain the relation to the objectives of the project

evidence the performance of proposed approaches.

Specify the types and formats of data generated/collected

Not applied.

Specify if existing data is being re-used (if any)

Specify the origin of the data

not applied.

State the expected size of the data (if known)

not applied.

Outline the data utility: to whom will it be useful

any researchers in the similar fields.

2.1 Making data findable, including provisions for metadata [FAIR data]

Outline the discoverability of data (metadata provision)

not applied.

Outline the identifiability of data and refer to standard identification mechanism. Do you make use of persistent and unique identifiers such as Digital Object Identifiers?

not applied.

Outline naming conventions used

not applied.

Outline the approach towards search keyword

not applied.

Outline the approach for clear versioning

not applied.

Specify standards for metadata creation (if any). If there are no standards in your discipline describe what metadata will be created and how

not applied.

2.2 Making data openly accessible [FAIR data]

Specify which data will be made openly available? If some data is kept closed provide rationale for doing so

not applied.

Specify how the data will be made available

Question not answered.

Specify what methods or software tools are needed to access the data? Is documentation about the software needed to access the data included? Is it possible to include the relevant software (e.g. in open source code)?

Question not answered.

Specify where the data and associated metadata, documentation and code are deposited

Question not answered.

Specify how access will be provided in case there are any restrictions

Question not answered.

2.3 Making data interoperable [FAIR data]

Assess the interoperability of your data. Specify what data and metadata vocabularies, standards or methodologies you will follow to facilitate interoperability.

Question not answered.

Specify whether you will be using standard vocabulary for all data types present in your data set, to allow inter-disciplinary interoperability? If not, will you provide mapping to more commonly used ontologies?

Question not answered.

2.4 Increase data re-use (through clarifying licenses) [FAIR data]

Specify how the data will be licenced to permit the widest reuse possible

Question not answered.

Specify when the data will be made available for re-use. If applicable, specify why and for what period a data embargo is needed

Question not answered.

Specify whether the data produced and/or used in the project is useable by third parties, in particular after the end of the project? If the re-use of some data is restricted, explain why

Question not answered.

Describe data quality assurance processes

Question not answered.

Specify the length of time for which the data will remain re-usable

Question not answered.

3. Allocation of resources

Estimate the costs for making your data FAIR. Describe how you intend to cover these costs

Question not answered.

Clearly identify responsibilities for data management in your project

Question not answered.

Describe costs and potential value of long term preservation

Question not answered.

4. Data security

Address data recovery as well as secure storage and transfer of sensitive data

Question not answered.

5. Ethical aspects

To be covered in the context of the ethics review, ethics section of DoA and ethics deliverables. Include references and related technical aspects if not covered by the former

Question not answered.

6. Other

Refer to other national/funder/sectorial/departmental procedures for data management that you are using (if any)

Question not answered.