MiSDaM01 Challenge Kick-Off Workshop

16 April 2019
Schuster Building
Europe/London timezone

Global Challenge Network+ in Advanced Radiotherapy

Welcome to the 1st Mining Science Data for Medicine Workshop

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This project resulted from a Sandpit Event organized by the STFC Global Challenges Network+ in Advanced Radiography [1]. The MisDaM project has three aims,

i) To obtain interesting medical science results with potential to apply to individual patients.
ii) Create a community of data miners to support the analysis of big data associated with medical science.
iii) Identify the algorithms and visualisations that are useful in this science area.

To achieve these aims, the project team will release challenges to the global community and invite anyone to solve a specific medical science problem using data mining and machine learning.

This handbook provides details on how anyone can get involved in the first challenge, called MiSDaM01.

THE TWO CHALLENGES……………………………………

Identification of DNA methylation–based markers of cellular senescence.

Ken Raj will give a talk explaining the science and the data.

Big challenge – 850,000 variables with 48 samples.

Explaining Machine Learning (ML) results to patients and doctors

David Watson will give a talk.

See also article in British Medical Journal

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10:00	**Arrive + Coffee**	
	Schuster Building	10:00 - 10:30
	Welcome + Challenge Overview	*Stephen WATTS* 📁
	Moseley Lecture Theatre, Schuster	10:30 - 11:00
11:00	**Identification of DNA methylation-based markers of cellular senescence**	
	Moseley Lecture Theatre, Schuster	11:00 - 12:00
12:00	**Discussion Session**	
	Schuster Building	12:00 - 12:30
	Buffet Lunch	
13:00	*Schuster Building*	12:30 - 13:15
	Clinical applications of machine learning algorithms: beyond the black box	
14:00	*Schuster Building*	13:15 - 14:15
	Discussion Session	
	Schuster Building	14:15 - 14:30
	Break into groups for discussion	
15:00	*Schuster Building*	14:30 - 15:30
	Afternoon Tea	
	Schuster Building	15:30 - 16:00
16:00	**Report from Groups**	
	Schuster Building	16:00 - 16:30
	Close Out	*Stephen WATTS*
	Schuster Building	16:30 - 16:45

A1.1 Challenge Rules

We are grateful to the GREAT08 Challenge Handbook,[2], from which these rules derive.

1) The data will be released publically at the end of the challenge.
2) The challenge end date will be shortly before the challenge " Results Workshop" in September 2019. To be specific, the end date is, 26 August 2019.
3) All registered teams are expected to present their results at the "Results Workshop" in September 2019. The date for the results workshop will be agreed at the kick-off workshop on 16 April 2019.
4) Teams signing up to the project will have access to the "DNA methylation–based marker of cellular senescence" data under condition that they abide by these rules.
5) Teams will be encouraged to publish if they wish, but commit not to do so until after the final challenge report has been issued in pre-print form to the arXiv or January 2020, whichever date is earliest.
6) Publications from individual teams should acknowledge the source of the data and the MiSDaM01 challenge. The fact that the data was provided as the result of UKRI/STFC funding should be acknowledged.
7) Participants may use a pseudonym or team name on the participants list, however real names (as used in publications) must be provided when requested during the result submission process.
8) Participants must provide a report detailing the results and methods used, at the challenge deadline. We would prefer that any code developed for this challenge is made public. We suggest the use of GitHuB.
9) We expect all participants to allow their results to be included in the final Challenge Report. We will however be flexible in cases where methods performed badly compared to other methods or if participants are strongly against publicising them.
10) Clarification concerning the data will be provided (if possible) when requested and will be made available to all participants.

Some additional competition rules apply to members of the Local Project Team who submit entries:

A)   For the purpose of these rules, "Local Project Team" includes the authors of this document and staff or students associated with them.

B)   Only information available to non-team participants may be used in carrying out the analysis.

REGISTER YOUR TEAM BY EMAILING Stephen.Watts@manchester.ac.uk

Give a name - e.g. LuckTeam1 ?

Give a name, institution and email of the coordinator.

Give the institutions involved – state if you want this public or delay this until the end of the challenge.

Give some label to the technique the team will be using.

People can be on more than one team if they wish

Indicate if you are to join in either Challenge 1, 2 or Both

Do you want access to computer resource ?

A ZendTo link will be sent to the coordinator for the DNA data

DEADLINES -   26 August 2019.
                            -   Results workshop in September. This will be written up for
                                publication.

GOOD LUCK !!!!!!!!!!!!!!!!!!!!!!!!!!!!