Online Training Programme on

"Machine Learning and its Applications in Climate Smart Agriculture"

May 15-17, 2020

ABOUT

The project entitled "Center for Advanced Agricultural Science and Technology (CAAST) on Climate Smart Agriculture and Water Management (CSAWM)" is being implemented in Mahatma Phule Krishi Vidyapeeth (Agricultural University), Rahuri, Maharashtra under World Bank Sponsored National Agricultural Higher Education Project (NAHEP) of Indian Council of Agricultural Research (ICAR), New Delhi, Government of India, since2018.

One of the major objectives of CAAST-CSAWM project is to develop the capacity amongst the faculties and students of MPKV, Rahuri and others for the development and adoption of the precise Climate Smart Agriculture and Water Management Technologies as well as to conduct on the job training and case study based learning to enhance the employment and placement rate and business and entrepreneurship opportunities

http://www.mpkv-caast.ac.in; info.rahuri@mpkv-caast.ac.in

Background

Machine Learning is the field of Artificial Intelligence by which computers can be taught without explicit programming. Machine learning has many applications in farming such as automated irrigation systems, drones, smart robots for picking fruit, crop monitoring systems, precision agriculture, animal identification and health monitoring, greenhouse climate controller (fuzzy logic is also used) and climate smart agriculture. The tools and products based on Machine Learning can help farmers to detect weed and disease, perform efficient irrigation water management; and predict yield and crop quality. In view of this, the online training programmeis being organized by CAAST-CSAWM, MPKV, Rahuri during May 15-17, 2020 through online mode.

This training programme will also be useful to the participants to release stress of COVID-19.

Objectives

- To introduce the participants the concept of Machine Learning.

- To introduce the applications of Machine Learning for Climate Smart Agriculture.

Contents

- Supervised learning
- Methods of Supervised learning
- Unsupervised learning
- Deep Learning
- Models of Deep Learning

The training will also include various issues such as overfitting, bias and variance, tradeoffs between representational power and learnability, evaluation strategies and cross-validation related to the application of machine learning algorithms.

Registration

Faculties, Scientists, Staff and Students of Mahatma Phule Krishi Vidyapeeth, Rahuri and other Agricultural/Traditional Universities are eligible to register and are requested to take advantage of the online training course during the lock down period. The candidates having Mathematics/Engineering background will be preferred.

The online training will be available to 100 registered eligible candidates (50 candidates of MPKV, Rahuri and 50 candidates of other Agricultural/ Traditional Universities).

Communication about the selection

The WhatsApp group of the selected candidates will be formed at least one day before the start of the training programme and all the communications regarding the training programme will be posted on this WhatsApp group. Alternatively the candidates can keep accessing the CAAST-CSAWM website (http://www.mpkv-caast.ac.in) regarding the selection, preferable on the day before the start of the training programme.

Programme Fee
There is no registration fee for participants.

Important Dates
The interested candidates can register at:
https://www.mpkv-caast.ac.in/page/mltraining
On or before **May, 13,2020upto 1700 hrs**

Instructions
- Participants need to register by clicking on the link above and should provide an active email ID and WhatsApp number for further communication. If email ID and WhatsApp number are not appropriate, you may not receive any communications.
- The on-line training will only be available for the 100 registered candidates (50 candidates of MPKV, Rahuri and 50 candidates of other agricultural/ traditional Universities) only.
- Daily lectures through online platform will be conducted along with online discussions and tutorials. The link, ID and password for joining the online session will be communicated through WhatsApp group of the selected candidates 30 mins before the start of the session.
- QR coded Certificates will be issued to those participants only who will complete all online sessions and assignments/tutorials.
- Full on campus advanced training by different aspects may be conducted after lockdown period is over at appropriate time; and preference will be given to those who participate in this course.

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Programme Schedule

Date	Session	Time	Topics	Resource Persons
May 15, 2020	I	10.30-12.00 pm	Supervised Learning-I (k-nearest neighbor Single Perceptron)	**Dr. Ramesh K. Agrawal** Professor, School of Computer & Systems Sciences Jawaharlal Nehru University, New Delhi
	II	04.30-6.00 pm	Supervised Learning-II (Multilayer Perceptron network)	
May 16, 2020	I	10.30-12.00 pm	Supervised Learning – (Decision Tree, Random Forest)	
	II	04.30-6.30 pm	Unsupervised Learning (K-means, Hierarchical Clustering)	
May 17, 2020	I	10.30-12.00 pm	Deep Learning: Auto encoder	
	II	04.00-5.30 pm	Deep Learning: Convolutional Neural Network	
		05:30-06:30 pm	Valedictory Function	

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