***Recognizance***

**Introduction**

At present, artificial intelligence techniques are so numerous and pervasive that frequently, when an AI technique becomes mainstream, it stops being considered artificial intelligence (This is known as the AI effect). One major subfield of AI is machine learning, which is, simply put, the science of making computers perform tasks for which they are not explicitly programmed. Machine learning has given us adaptive websites, speech recognition, effective search engines and countless other technologies that enrich our day-to-day lives.

One of the various fields implementing machine learning techniques is image processing. It is a rapidly advancing technology which has a variety of applications including remote sensing, medical imaging, driverless car navigation and maybe more familiarly, line-following robots. Image processing has come a long way from the old days, when taking a photograph took an hour, to the present, when handwriting recognition is widely available.

If you have an interest in machine learning or image processing, Recognizance will supply you with some hands-on experience in the field of machine learning, applied to image processing.

**Event Structure**

The theme of this event is development of Face Recognition System using Eigenvectors approach in MATLAB.

The task here is to recognize a given face image. Initially the machine would be trained by a set of training images. The machine would then use training data to recognize faces.

It would require basic knowledge of algorithms of Machine Learning for which we would organize five workshops. This event would consist of following modules:

* Implementation of Neural Network Algorithm to train the machine.
* Development of Principal Component Analysis (PCA) procedure.
* Formation of best Eigenspace using best Eigenvectors.

**Rules**

* Teams of at most 3 students are allowed.
* Participants should be registered graduate/undergraduate students of an accredited institute. Participants from different institutes can be part of a single team.
* Participants should on the Prastuti '15 website before submission.
* Participants are required to carry their own laptop and peripherals as required. (Power supply and charging points will be provided during the event).
* Organizers are not responsible for the failure of devices during display and no benefits/relaxations will be provided in such circumstances.
* The decision of the organizers and judges will be final and binding for all. No arguments will be entertained.

**Judging Criteria**

* The submission of the respective teams for each round will contribute to the final scores.
* Each round will have a different weightage depending upon the complexity of the task.
* Late submission will lead to deduction of scores.
* In case of a tie, conceptual understanding of the Machine Learning Algorithms will be evaluated.