

## Machine Learning Challenge

For this problem you'll need to develop an algorithm that can recognize bangla digits.

In recent years we are witnessing the rise of machine learning. Combining rich dataset with an appropriate machine learning algorithm we can solve many problems otherwise unsolvable, even in near human accuracy. Digit recognition is such a problem.

But unfortunately we don't have that good dataset for Bangla. So your challenge is to

- 1) Create a dataset
- 2) Design a model
- 3) Train the model with your dataset

To reduce the complexity, your model will only have to recognize bangla digits ১, ২, ৩, ৪, ৫, ৬, ৭, ৮, ৯, ০

We'll provide you with some sample input data for your familiarity with i/o and testing purposes. But the full test data will stay hidden and only be given on contest day.

This challenge involves you with an important but mostly overlooked part of a machine learning pipeline, the generation of data.

The contestants will have to submit both their own original annotated training data and code.

So start collecting a diverse dataset, develop models, tune the hyperparameters, train and finally evaluate your model.

Notes:

1. The input will be **color images**. We cannot assure you the file format or image resolution, your challenge is to develop a robust system that can handle color or b&w images of any resolution of any format ( jpeg and png will suffice) . Your model will thus extract features from an image and predict the digit.



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2. Please find the sample data here - [nrfd.org/downloads/Contests/Intelligence/ML.zip](http://nrfd.org/downloads/Contests/Intelligence/ML.zip), but **these are only meant for validation purposes, not for training.** For this challenge you'll have to create your own dataset. In the zip file you'll find that digits are arranged in folders.
3. You must submit your original training dataset. We would prefer huge and diverse datasets. You'll also be graded for the quality of your dataset.
4. In the final competition you'll only have to submit your outputs not your codes, so you may feel free to use any libraries, modules or algorithms you wish.

### Decision of Judges

Decision of the judges will be the final and judges are having the full rights to take any decision regarding results. Advisors of this competition have the superior power on judgment.

### Changes to Rules and Deadlines

Contest organizing team reserves the full rights to change the rules & regulations and also the deadlines as well.

### Assessments and Awards

- Works submitted must meet content requirements and reflect the theme and mission set by the Competition Organization Committee. They have to be reflective of the concept.
- One winning team and One runners up team will be awarded with cash prize in case of proper competition (More than 5 teams)
- Other shortlisted contestants will issue shortlisted certificate for contestants who have completed but did not receive any of the above awards and certificate for contestants whose works are not completed for some reason.
- Works submitted for Contest must be unique content, if any copy found the team will be disqualified.

### Consent

By entering this competition you are giving your consent with agreement that you read all the rules and regulations and you are agreed with these.

### Registration

1. Your team will have to get registered through this link [ [www.nrfd.org/register](http://www.nrfd.org/register)] before December 18, 2017

### Any Query?

Please drop your query at **[contact@nrfd.org](mailto:contact@nrfd.org)**

Or, NRF Facebook Page Inbox