

# SGN-41007 Assignment Task 2

*Predict competition classes using Keras.*

- ▷ The second assignment task uses Keras for training a deep network with the competition data.
- ▷ A written report of the group solution is required (at least 1 page); due date Friday 2.3.2018 at 23:59. Return to Moodle.
- ▷ Two alternatives for reporting:
  1. Follow the instructions below.
  2. If you have over 0.7 on the public leaderboard, you may choose to write a free form report of what you did.
- ▷ To have an access for the GPU's at TC303, please email to [heikki.huttunen@tut.fi](mailto:heikki.huttunen@tut.fi) with the subject line: "SGN-41007: Access to TC303" latest on Tuesday 20. Feb.

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## 1. *Use the proposed cross validation split.*

In the first assignment, many groups used a random split for evaluating classifier performance. This time, use the recommended split to better align with the scores in the leaderboard.

## 2. *Train a convolutional network with Keras.*

Train the convolutional net described on the course blog:  
<http://sgn-41007-2018.blogspot.fi/2018/02/recurrent-networks-feb-12.html> and report the accuracy on the recommended train/test split.

## 3. *Adjust the convolutional network.*

Add a convolutional + maxpooling layer and check the accuracy.

## 4. *Regularize the network.*

Add a  $L_1$  regularizer to each layer and check the accuracy.

## 5. *Submit.*

Log in to Kaggle and submit your solution (if local CV suggest better accuracy than your best model).