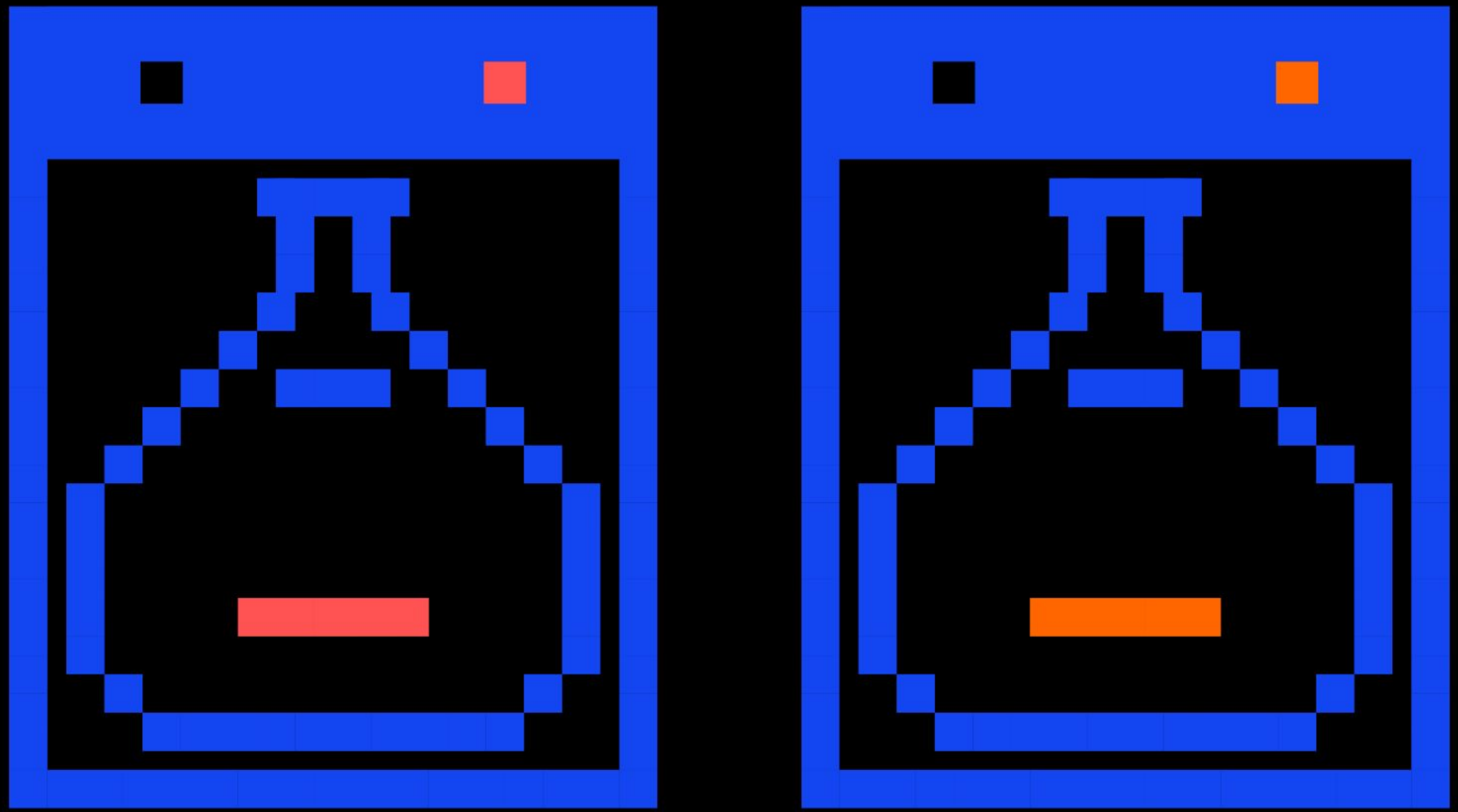
CLOUDFLIGHT
CODING
CONTEST

Level 3



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- Well done! You have convinced the manager that AI can indeed improve the production performance. Now he wants to introduce AI also in other parts of production line!
- You have identified another bottleneck where Machine Learning can help. There is an oven where items are being heated up. The exact temperature of the oven has to be set for each item separately, based upon certain parameters
- The configuration process is quite slow. Besides labeling the items, your workers also write formulas on top of them, from which the oven configuration needs to be calculated by the responsible oven expert
- You want to automate the process of reading out the information and configuring the oven for each item

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- Luckily, you can again reuse your computer vision system that reads formulas from the items

- The dimensions of the images containing the formulas are 28x196 pixels. Similarly as in the previous task, these images are flattened to a vector of size 5488

- The oven configuration that you are about to predict are decimal numbers between 0 and 1

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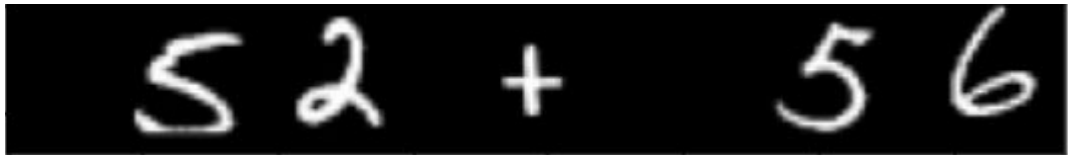
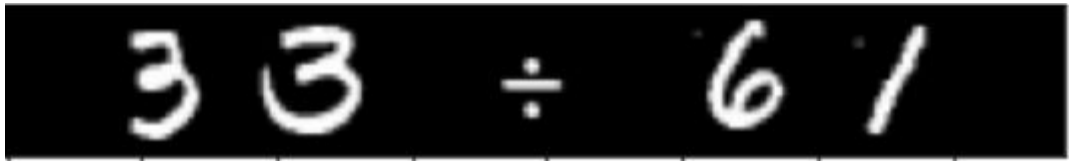
- The oven expert shows you an example of such formula and explains you that here the configuration parameter needs to be set to 0.6545



- She shows you another example, where the configuration parameter is set to 0.0547



- Unfortunately, you didn't completely understand how she calculates the configuration parameter, but she provided you with many more examples, that you can use while designing the solution

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- Input data:
  - Training images of formulas written on the items
    - Format:

      N (integer) - number of examples

      pixel_values (integer values separated by commas) (repeated N times, each example in its own line) - 5488 integer values that correspond to pixel values of a flattened 28x196 image

      label (float) (repeated N times, each example in its own line) - float value with 4 decimals, corresponding to a configuration parameter given in the same order as the pixel_values
  - Test images (without the desired machine parameter values)
    - Format:

      M (integer) - number of test examples

      pixel_values (integer values separated by commas) (repeated M times, each example in its own row) - 5488 integer values that correspond to pixel values of a flattened 28x196 image
- Output data:
  - Predicted configuration parameters for all the items from test images
    - Format:

      label (float) (repeated M times, each example in its own line) - float value with 4 decimals, corresponding to predicted configuration parameter given in the same order as the pixel_values
- Evaluation
  - Root Mean Squared Error (RMSE) of all results for the test set
  - The error must be lower than **0.075** to pass this level