BONN-RHEIN-SIEG UNIVERSITY OF APPLIED SCIENCES

Learning and Adaptivity
- In-Lab Assignment 02 -
Getting The Numbers

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1 Getting The Numbers

1.1 The Model

To solve the problem knowing the count of some special characters is sufficient. So using only the information about these numbers will also be enough for a model to learn to solve this task. Because this problem can be solved by concatenating some boolean functions and counting the appearance of the single numbers, an MLP should be able to solve the task. Therefore I decided to use the Regressor-implementation of *sknn.mlp*.

1.2 Preprocessing

The network uses ten inputs, each of which represents the count of one letter (Z, U, X, G, W, H, F, S, O, I) within the input string. To get these numbers, I use the *collections.Counter* object.

1.3 Postprocessing

The network has ten outputs, each of which represents the count of the numbers 0-9. The output is real valued, so it has to be rounded to the next integer first. These counts then have to be expanded to a string of numbers in increasing order.

1.4 Usage

The provided python code "*getTheDigits.py*" reads the file *"validation.txt"* and writes the decoded numbers into *"validation.out"*. It is not able to handle a header line as in the code jam problem as it was not clear to me what kind of input-files to expect. But this would just be a small addition to the genfromtxt command.