Feedforward Neural Network (FFNN)

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Due: Before the next lab session.
Evaluation: Code and explanation about the code (in groups of up to 3 people)
Remark:

- Only groups of one/two/three people accepted. Forbidden groups of larger number of people.
- No late homework will be accepted.
- No plagiarism. If plagiarism happens, both the "lender" and the "borrower" will have a zero.
- Code yourself from scratch. No homework will be considered if you solve the problem using any ML library.
- Do thoroughly all the demanded tasks.
- Study the theory for the questions.

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1 Tasks

1. Download the data stored in the file `data_FFNN.txt` available on the course website. This dataset consists of three columns: $x1$, $x2$ and y.
2. Implement the aforementioned classifier using the feedforward neural network (FFNN) approach by learning its parameter values using the provided dataset. This FFNN should consist of three layers, in which the hidden layer has 5 neurons.
3. What are the optimal parameter values for the hidden layer (v) and for the output layer (ω)?
4. Show that your classifier can correctly classify for (x_1, x_2)=$(2, 2)$ and for (x_1, x_2)=$(4, 4)$.

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