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NEURAL NETWORKS & AESTHETICS

Frieder Nake
Summer 2020

Work for Credit (FN, 23 July 2020)

There are four options for you to collect credit points for this workshop. They are listed here with the work you are supposed to do.

Option 1

4 CP for Topics in Digital Media (Essay)

"The learning Neural Network" We often read about the capability of Neural Networks (that are considered to be Computing Systems) to "learn". Describe, what the term "learning"here stands for, and critically compare that with learning processes in humans.

Submit an essay (pdf) of about 10 pages.

Option 2

6 CP for Topics in Digital Media (Essay)

Same as option 1, but include a section on Learning Theory. For this, choose a good textbook as your main source.

Submit an essay (pdf) of about 15 pages.

Option 3

4 CP for Topics in Media Informatics (Software & Description)

Design and implement a data-structure for a layered neural network with n numerical inputs and one numerical output. There should be three hidden layers of k_1, k_2, k_3 nodes. Weights should be arbitrarily definable. The concrete numbers of nodes, the connections from one layer to the next, and the concrete weights must all be parameters given interactively at design time.

Submit the code, well documented, and a descripton (pdf) of the development decisions and the use. The code should preferably be in Processing.

VAK 03-06-M-309 | Summer term 2020 | one-week workshop under special conditions | 2 SWS | 4 ECTS | at changing places
M.A., M.Sc. Digital Media | Module Topics in "Media Informatics" or in "Digital Media" | from 20 to 24 July 2020, 10 to 16 |

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Option 4

6 CP for Topics in Media Informatics (Software & Description)

Same as option 3, but the number of hidden layers should be a parameter.

Your essays should be well-structured, references given, quotes clearly marked. Give a description of the goal and at the end, of the actual achievements and shortcomings.

Your software must be structured into logical units and annotated in such a way that it is possible to easily follow up the logic and dependencies between parts. The description should help to analyze the code.

Deadline for all submissions is 31 August 2020.