COMPUTATIONAL INTELLIGENCE

LABORATORY CLASSES

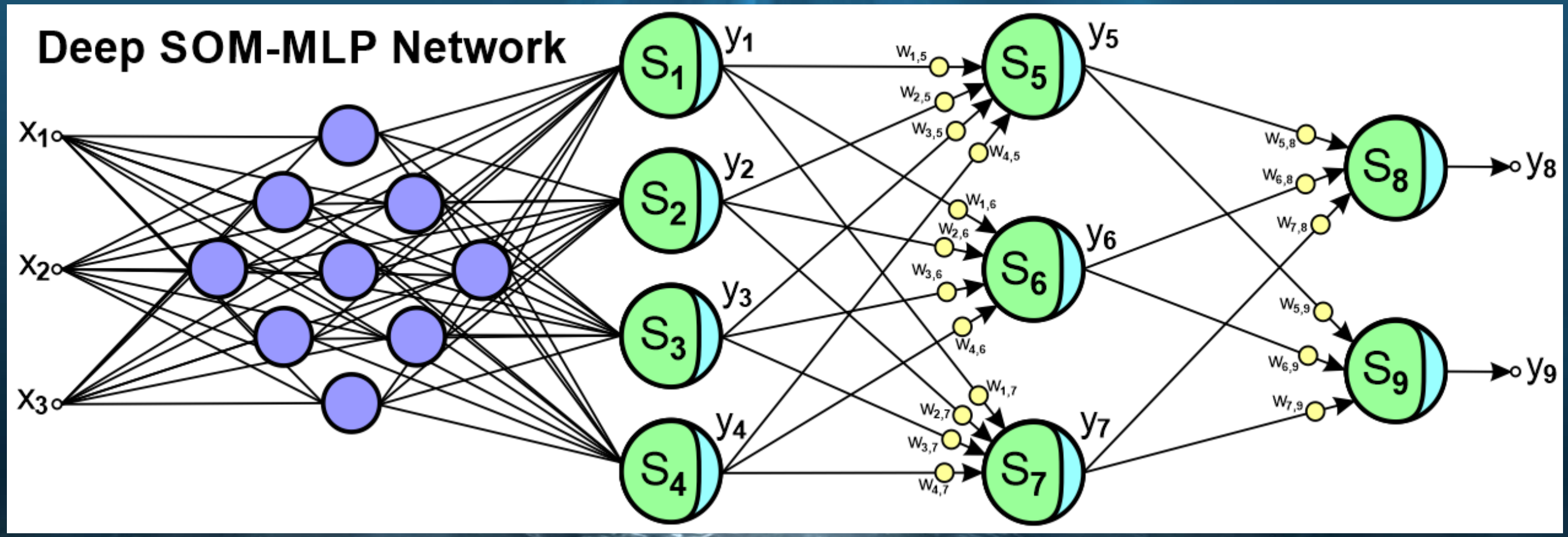
Implementation of a Deep MLP Classifier using Self-Organizing Maps for Feature Extraction

AGH

Adrian Horzyk

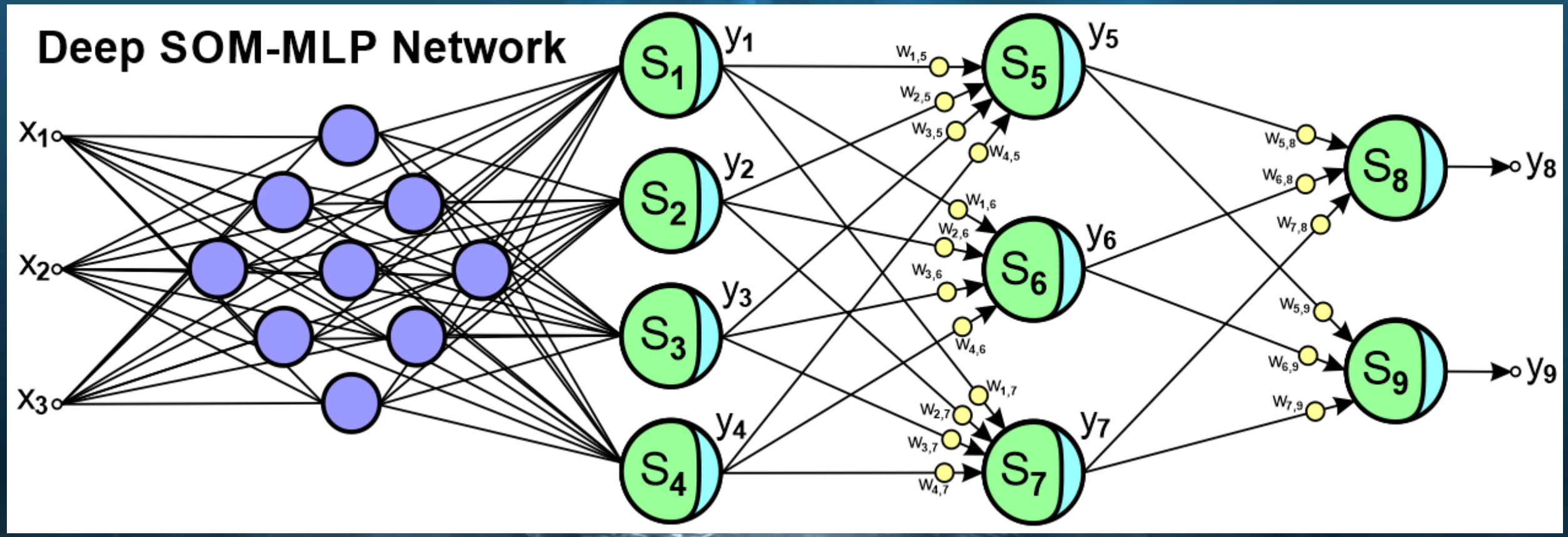
Use SOM in your MLP Classifier

In the first layer of the previously developed MLP network add unsupervised trained SOM for initial features extraction and develop the deep MLP Classifiers for the Iris data. Use all output neurons of SOM as inputs to MLP network. Compare results with the previous solutions.



Use SOM in your MLP Classifier

First, create a SOM network and train it to get groups of training samples represented by its nodes. Second, use all SOM outputs computed for each original input data to stimulate the MLP Network instead of using the original input data. You can also use both on the input of the MLP network.



Bibliography and References

http://home.agh.edu.pl/~horzyk/lectures/ahdydci.php

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LECTURES

COMPUTATIONAL INTELLIGENCE

is already under construction and will be available at the spring semester in 2016/2017.

This course will include 28 lectures, 14 laboratory classes and 14 project classes.

What is this course about?

This course is intended to give students a broad overview and deep knowledge about popular solutions and efficient neural network models as well as to learn how to construct and train intelligent learning systems in order to use them in everyday life and work. During the course we will deal with the popular and most efficient models and methods of neural networks, fuzzy systems and other learning systems that enable us to find specific highly generalizing models solving difficult tasks. We will also tackle with various CI and AI problems and work with various data and try to model their structures in such a way to optimize operations on them throughout making data available without necessity to search for them. This is a unique feature of associative structures and systems. These models and methods will allow us to form and represent knowledge in a modern and very efficient way which will enable us to mine it and automatically draw conclusions. You will be also able to understand solutions associated with various tasks of motivated learning and cognitive intelligence.