

SGN-42006 Machine Learning, During II period, 5 cr.

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Room TF309
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Lectures 24 h, exercises 12 h

Time and Place: The Course will be lectured during II period. Lectures are mainly on Mondays 12.15 -14 a.m. and on Fridays 14.15 - 16 p.m.. The first meeting will take place on the Monday, 20th of October, 12:15 a.m. in the lecture room TB104.

Topics: The course takes up the central questions in Machine Learning but will concentrate on basic and some more advanced methods of neuro computing. The course of Pattern Recognition will take care of the other part of the topic. The theory and the possibilities to apply neuro computing to some application fields are considered.

Audience: The course is intended to students who are close to graduation in the fields of signal processing, computer science or telecommunication. The course is also suitable to post-graduate studies.

Requirements: The examination is based on the final exam and active participation in classroom exercises. M.Sc. Katariina Mahkonen takes care of exercises, room TF312, Email katariina.mahkonen@tut.fi . The first exercise takes place on the 30th of October 2014 14.15-16.00, room TC407.

Exercises: Web page for the exercises can be reached
From <http://www.cs.tut.fi/sgn/arg/SGN-Lec/SGNLec-exer.html> .

Literature: Neural Networks: a Comprehensive Foundation, Simon Haykin, 2nd Ed. Prentice-Hall Inc., 1999.
http://cdn.preterhuman.net/texts/science_and_technology/ar

[tificial_intelligence/Neural%20Networks%20-%20A%20Comprehensive%20Foundation%20-%20Simon%20Haykin.pdf](#)

Date	Place	Subject
20.10.2014 12-14	TB101	Introduction Chapter 1 Lecnn1.pdf
24.10.2014 14-16	TB103	Learning Chapter 2, guest lecture Lecnn2.pdf
27.10.2014 12 -14	TB101	Perceptron Chapter 3 Lecnn3.pdf
31.10.2014 14-16	TB103	MPL Chapter 4 Lecnn4.pdf
3.11.2014 12-14	TB101	RBF Chapter 6 Lecnn5.pdf
7.11.2014 14-16	TB103	SVM Chapter 5 Lecnn6.pdf
10.11.2014 12-14	TB101	Committee Machines Chapter 7 Lecnn7.pdf
14.11.2014 14-16	TB103	PCA Chapter 8 Lecnn8.pdf
17.11.2014 12-14	TB101	SOM Chapter 9 Lecnn9.pdf
21.11.2014 14-16	TB103	Stochastic Machines Chapter 11 Lecnn10.pdf
24.11.2014 12-14	TB101	Temporal Processing Chapter 13 Lecnn11.pdf
1.12.2014 12-14	TB101	Recurrent Neetworks Chapter 15 Lecnn12.pdf