Course: Applied Machine Learning — credits: 5

Course code	SEVM19AML
Name	Applied Machine Learning
Study year	2026-2027
ECTS credits	5
Language	English
Coordinator	S.S. Ahmed
Modes of delivery	Lecture Project-based learning
Assessments	Applied Machine Learning - Assignment

Learning outcomes

At the end of this module the student:

- the student can analyse a data analysis task and compare features to evaluate their fitness for the machine learning task at hand.
- the student can evaluate whether a data analysis task requires dimensionality reduction, blind source separation, cluster analysis or classification.
- the student can interpret high dimensional data using dimensionality reduction techniques such as principal component analysis.
- the student can interpret multi-sensor data:
  - using blind source separation techniques like independent component analysis.
  - using cluster analysis techniques like hierarchical agglomerative clustering and k-means.
  - using classification algorithms like support vector machines.
- the student can apply anomaly detection on a stream of sensor data.

Content

The course covers the following topics:
machine learning overview, dimensionality reduction, blind source separation, cluster analysis or classification, coverage plot, confusion matrix, cost functions.

Included in programme(s)

Smart Systems Engineering

School(s)

Engineering, Life Sciences & ICT

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