

<b>Course Name</b>	Optimization in machine learning
<b>Contents and Objectives</b>	<p><u>Content:</u></p> <ul style="list-style-type: none"> <li>• Challenges of large-scale and high-dimensional optimization problems</li> <li>• deterministic methods</li> <li>• stochastic methods</li> <li>• efficient computation of derivatives</li> <li>• optimization methods for classification tasks</li> <li>• optimization in deep learning</li> </ul> <p><u>Objectives:</u> The students are familiar with optimization methods within deep learning, classification and kernel methods. They are able to choose suitable methods and are able to implement these as well as test them on real world data</p>
<b>Teaching</b>	<p>This course consists of lectures and exercise classes.</p> <ul style="list-style-type: none"> <li>• Lecture: Optimization in machine learning (4h/week)</li> <li>• Exercise class: Optimization in machine learning (2h/week)</li> </ul> <p>This class can be taught remotely.</p>
<b>Prerequisites</b>	
<b>Examination</b>	Oral exam (30 minutes)
<b>Credits</b>	8 ECTS points
<b>Frequency</b>	This course is given at least every second year.
<b>Workload</b>	The estimated total working time for this course is 240 hours.
<b>Duration</b>	This course is given during one semester.