MACHINE LEARNING FOR AUTONOMOUS ROBOTS

Course Description

Melvin Laux and Prof. Frank Kirchner

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University of Bremen

German Research Center for Artificial Intelligence

Course organisation

Title:	Machine Learning for Autonomous Robots (03-ME-712.07)
Lectures:	Pre-recorded videos (released weekly on Stud.IP)
Q&A Session:	Tuesdays, 10:15 – 11:45 in RH1 A1.03
Tutorial:	Thursdays, 14:15 – 15:45 in RH1 B0.10
Start Date:	10.2022 in RH1 B0.10
Language:	English
ECTS:	6
Participant Limit:	max. 40 students
Examamiation Options:	exercise sheets + Fachgespräch, Oral exam (Modulprüfung)

Teaching Format

- The course is taught in a hybrid format
- **Lectures** will mainly be in video format provided via StudIP
- **Tutorials** will take place on-site and in person
- Limit of max. 40 participants, you need to sign up to in StudIP in week 1!

What to Expect

What you will be doing:

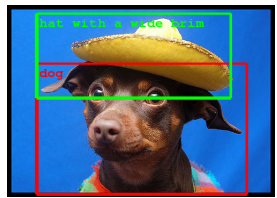
- Learn the fundamental concepts of supervised and unsupervised machine learning
- Understand how ML is applied in the field of robotics
- Gain hands-on experience through **group homework assignments** (3-4 students)

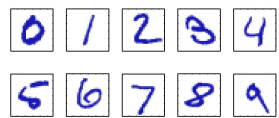
(Soft) Requirements:

- **Programming** skills (ideally Python)
- Fundamental knowledge of **linear algebra, analysis, probability theory and statistics**
- All course contents are provided in **English**

Content Overview

- Machine Learning Basics
- Classification
- Regression
- Unsupervised Learning
- Ensemble Learning
- Neural Networks
- ML Applications in Robotics





Sign up now!

- More information during live lecture on Tuesday, 18.10.22, 10:00-12:00 in RH1 B0.10!
- Sign up now on StudIP to participate!

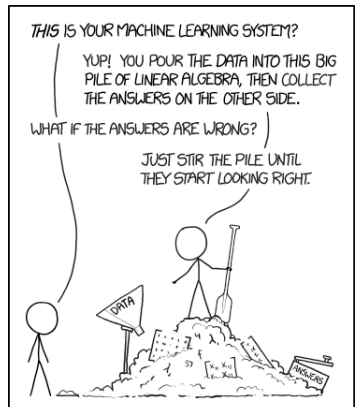


Figure: `https://imgs.xkcd.com/comics/machine_learning.png`