

Machine Learning – Practical Examples for Teachers

Related learning material: M1-T1-MLC2 – Introduction to the Concepts of Artificial Intelligence (AI) – Machine Learning

Purpose of the exercise: Deepening the basic machine learning concepts covered in the learning material with the help of ChatGPT, as part of the teacher's own preparation, together with a classroom task to develop students' conscious use of AI – without students needing to know the names of the learning paradigms (supervised, unsupervised, reinforcement learning).

Exercise 1 – an exercise to support the teacher's own learning

Title: Machine Learning – Conceptual Self-Check with ChatGPT

Exercise: During preparation, the teacher uses ChatGPT to organise and check their knowledge of the basic concepts of machine learning (supervised, unsupervised, reinforcement learning) before teaching the lesson.

Duration: 20 minutes

Format: individual, independent preparation

Tools: computer or smartphone, ChatGPT (or another chatbot), the text of the learning material

Instructions:

1. Read the „Types of Machine Learning” section of the learning material again, and note which concept (supervised, unsupervised, or reinforcement learning) is the least clear to you.
2. Open ChatGPT and paste in the prompt below, replacing the part in square brackets with your own subject.

ChatGPT prompt (for your own preparation):

Act as a patient AI tutor preparing secondary school teachers to teach artificial intelligence! Explain, using simple, everyday examples, the difference between supervised learning, unsupervised learning, and reinforcement learning! For each type, give one example that I could also use as an illustration in [my own subject, e.g. biology, history, geography] class! At the end, ask three check questions so I can verify whether I understood the differences correctly!

3. Compare the answer you receive with the text of the learning material: where it matches, where it differs, and what is missing from or more precise than the learning material.
4. If a concept is still unclear (e.g. reinforcement learning), ask the chatbot for a second, even simpler analogy, and then formulate it in your own words in one sentence.

Takeaway: „A concept that I managed to understand better with the help of ChatGPT, and that I can now explain to my students in my own words.”

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Exercise 2 – classroom work with students

Title: „Where is AI hiding?” – conscious AI use in everyday life

Exercise: In small groups, students map out which of their everyday applications (social media, streaming, keyboard, navigation, camera, etc.) run artificial intelligence in the background without them consciously noticing it, and then use ChatGPT to find out what the given application might „notice” about them, and what they could do about it more consciously. Students do not need to know the names of the learning paradigms (supervised, unsupervised, reinforcement learning) – the goal is conscious, critical AI use.

Duration: 30 minutes

Format: small-group work (groups of 3–4)

Tools: one device per group (smartphone or laptop) with internet and ChatGPT access, paper or a shared document for listing

Instructions:

1. Each group collects 5–6 applications or devices they use daily (e.g. social media, music or video streaming, smartphone keyboard, map/navigation, camera, facial-recognition screen lock, school learning app).
2. For each application, ask the question: does artificial intelligence run in the background, and if so, what do they think it might „notice” or learn about them?
3. Choose one application they are unsure about, and look into it with ChatGPT – replace the part in square brackets with their own application.

ChatGPT prompt (for the classroom group task):

I am a secondary school student. I would like to understand how [e.g. Instagram/Spotify/my smartphone's keyboard] uses artificial intelligence in the background! What data might it collect about me, and what might it use it for? Formulate 2–3 things I should pay attention to if I want to use this application more consciously!

4. The group compares the answer received with their own assumptions, and then formulates a sentence: what they will do more consciously from now on regarding the given application (e.g. reviewing privacy settings, taking a critical view of recommendations).
5. Each group briefly (about 1 minute) shares its findings with the class.
6. Joint wrap-up: the teacher summarises that conscious AI use does not only mean what we use directly and consciously (e.g. ChatGPT), but also what works invisibly in the background for us – or indeed about us.

Takeaway: „One thing I will handle more consciously from now on in an application that also uses AI.”

Note for teachers: the first exercise deepens the teacher's own conceptual knowledge, while the second builds on this deepened knowledge to help

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students become more consciously aware of where and how AI is present in their daily lives – in line with the „Takeaways for Teachers” section of the learning material: the models' responses are probabilistic estimates, so both teachers and students should treat them critically and cross-check them against sources.

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