# GWV – Grundlagen der Wissensverarbeitung

## Tutorial 1 : Application Scenarios and Terminology for Artificial Intelligence

**Exercise 1.1 : (Application Scenarios for Artificial Intelligence)**

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Today *Artificial Intelligence* (AI) is used in a wide array of different application scenarios ranging from web services to embedded systems. Define three application scenarios for AI that you are familiar with or that you can imagine to be useful.

Answer the following questions for each scenario:

- Define the task that is solved using AI. What is given and what is the desired result?
- Does such an application already exist? Can you provide an internet link?
- Why does the scenario task require intelligence? What are the difficulties if you want to design a computational solution for the problem? (Optional: Can you already provide some suggestions for AI techniques that could be used to solve the problem?)

During this course you will be introduced to several techniques that are used in artificial intelligence. Keep your scenarios in mind an try to think about applying the learned techniques to your application scenarios.

**Exercise 1.2 : (AI Terminology)**

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Knowledge is the central term in the whole module. But what do we mean when talking about ***knowledge***?

You probably carry around a lot of data on your smart-phone or laptop, in form of books or print-outs, and also in your mind. Give some examples (including a short explanation) for data from the mentioned sources that fit the following concepts:

- Information
- Implicit knowledge
- Explicit knowledge

A core capability a student of computer science should obtain is to characterise and to model an environment for applying an algorithm or in our case a knowledge-based method. Environments can be characterized by the following concepts:

- Fully observable & partially observable
- Discrete & continuous
- Deterministic & stochastic

For each distinction give a reason why the difference might be important when designing AI applications for the given environment. Try to identify problems that exists in environments of one type but not in the other. You can use simple examples of environments and tasks to explain these problems.

### Hints:

- Use this week's straightforward tasks to find a group of 2-3 people to team up with for the upcoming tutorials.
- Have an easy start in this module by grabbing the recommended literature now!
- The web site for this module is located at `http://nats-www.informatik.uni-hamburg.de/GWV1415/`

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