

Main Deliverable

individual **AI Report** on:

a real-life **machine learning use-case** of an existing **data product** solution.

AI accommodates & exploits "complex" human behaviour by means of automatised regulatory systems that are mechanical, biological, physical and/or cognitive in nature.

The necessity machine learning fall into 4 main categories:

When humans can't code rules for certain problems.

When you need to scale a solution to millions of cases.

When you can do it manually, but it's not cost-efficient.

When you have a massive dataset without obvious patterns.

A data product is any application or tool using data science combined with computing or statistical algorithms ---required by the AI-model--- that autonomously aids businesses (profit or non-profit) to provide a solution to a given societal or proprietary problem solely based on sampling data set.

It comprises a human-centered interface, creating meaningful insights derived from data science principles & methodologies such as:

- *Human Factors*
- *Predictive Analytics*
- *Descriptive Data Modeling*
- *Data Mining*
- *Machine Learning*
- *Risk Management*
- *Advanced statistics*

AI-Report structure

PART I

Problem Selection, Definition & Motivation + Human in the Loop

- Define Artificial Intelligence (in your own words)
- Define the 5 main characteristics (features) of AI
- Defining Artificial Intelligence (in your own words)
- Make your own info graphic/knowledge-map that gives an accurate overview of the state-of-the-art AI (see e.g., <https://www.nesta.org.uk/report/future-minds-and-machines/2-what-artificial-intelligence/>)

PART II

AI Data Product Description of ChatGPT

- Defining the Data Product ---**ChatGPT**--- (in your own words)
- What AI problem/use-case does it solve?
- Designate the Capability Domain & Application Domain
- Description of Data Product Components & Techniques Involved
 - Describe the User-interface
 - Describe the AI-model in terms of its Agency and Architecture
 - Describe the learning algorithm
 - Describe how it is trained
 - Describe the parameters involved

PART III

Use Case Description & Application

- Give a short overview of the most popular Chat-GPT use-cases + short description (in your own words)
see e.g., <https://research.aimultiple.com/chatgpt-use-cases/>
- Find examples of
 - Fact-checking/Truth Finding
 - Question answering
 - Educational Tutoring
 - Theory-of-Mind problem solving
 - APA-style citation
- Describe, demonstrate, and analyse each of use-cases in terms of:
 - Prompt engineering techniques
 - Human-Computer Interaction (HCI) principles
 - Performance level / Accuracy
 - Parameter setting

PART IVI

Critical Reflection & Ethical Considerations

- Assess popularity / "ground-breaking" aspects
- Evaluate whether the AI data product solves the problem at hand
- Review potential issues & existing documentation in relation to the European AI-act

Studied Literature

- Select 3 review articles, describe in your own words their relevance
- Provide an APA-style overview of the sources used to write your AI-report