Main Deliverable

Collaborative or 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*

Backbone AI Report

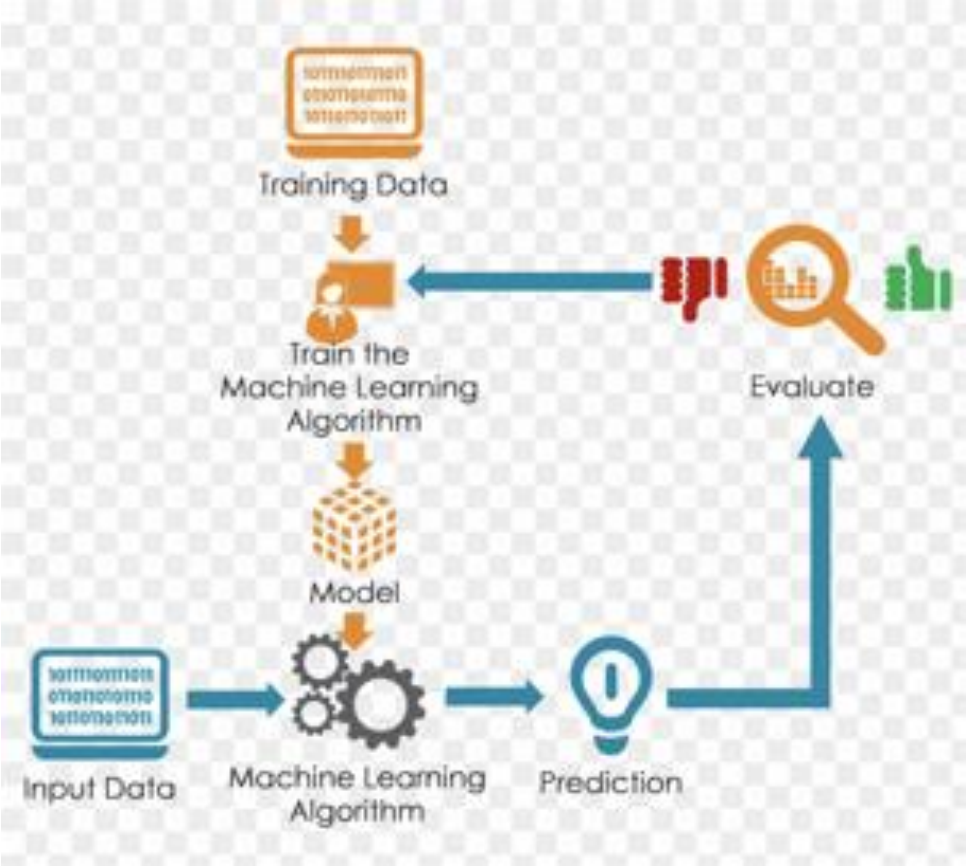
PART I Problem Selection, Definition & Motivation + Human in the Loop

Defining Artificial Intelligence (in your own words)
Why Do you Need AI? (What AI problem/use-case are you trying to solve)
Designate Capability Domain & Application Domain
Mission Statement + Definition of Done

PART II Data (Product) Description, Preparation & Annotation

Defining Data Science (in your own words)
Designate Data Type used
Datasets used
Data Labelling Requirements (Yes supervised ML/NO unsupervised ML)
Data Pipeline outline
Data Visualisation
Description of Data Product Components & Techniques Involved

PART III AI Model selection, coding, training and testing



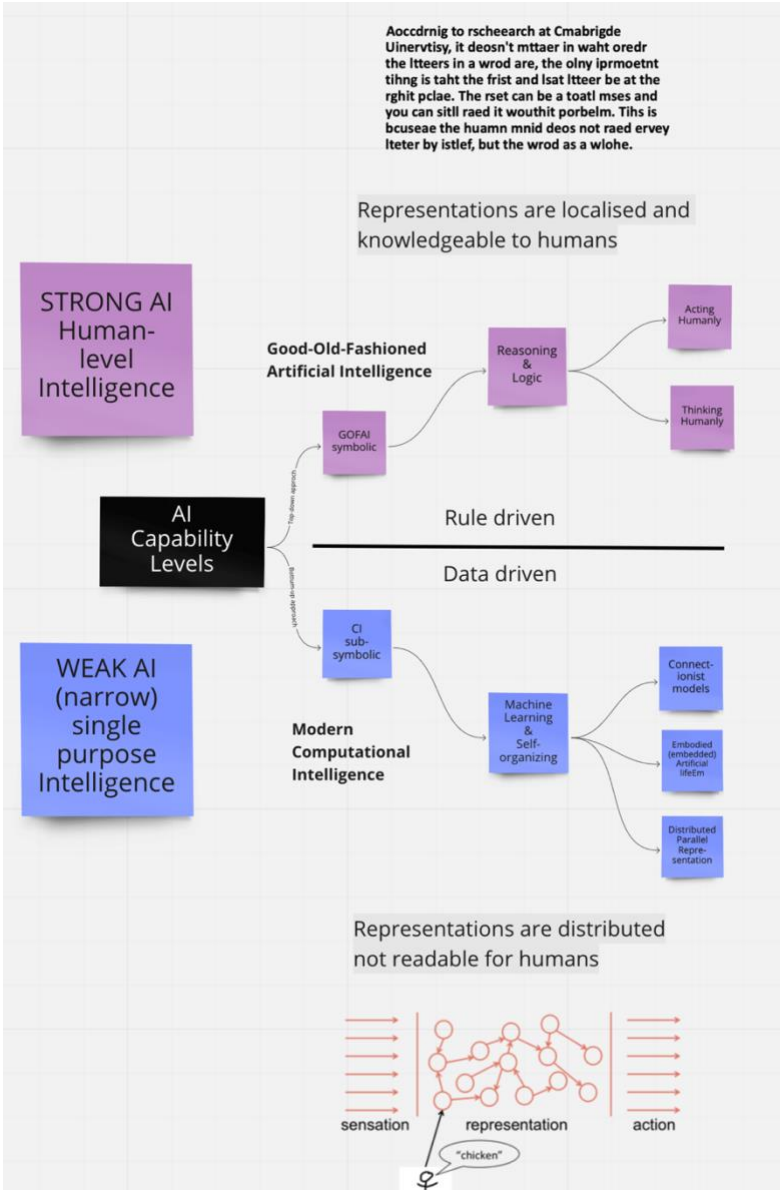
PART IV Critical Reflection & Ethical Considerations

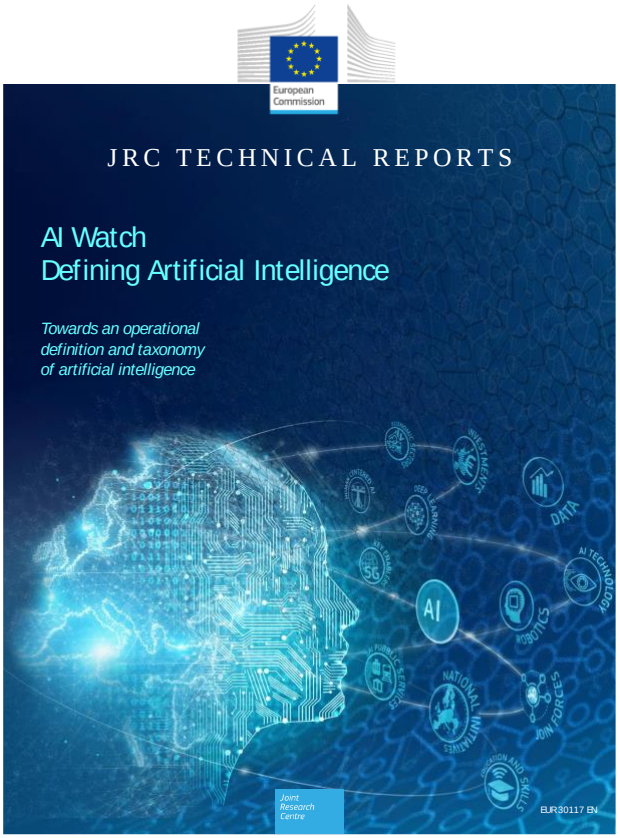
Evaluate whether the selected model solves the problem at hand
to ensure its suitability to your data-product solution.
Assess popularity / “ground-breaking-ness”
Review potential issues & existing documentation

Studied Literature

APPENDIX A:

PART I Problem Selection, Definition & Motivation + Human in the Loop





APPENDIX B:

PART II Data (Product) Description, Preparation & Annotation

https://www.rekenkamer.nl/onderwerpen/algoritmes/algoritmes-toetsingskader

Algemene Rekenkamer

DS&AI

Co-funded by the Erasmus+ Programme of the European Union

Curriculum Development in Data Science and Artificial Intelligence

599600-EPP-1-2018-1-TH-EPPKA2-CBHE-JP

Deliverable 2.5: DS & AI Course Outlines

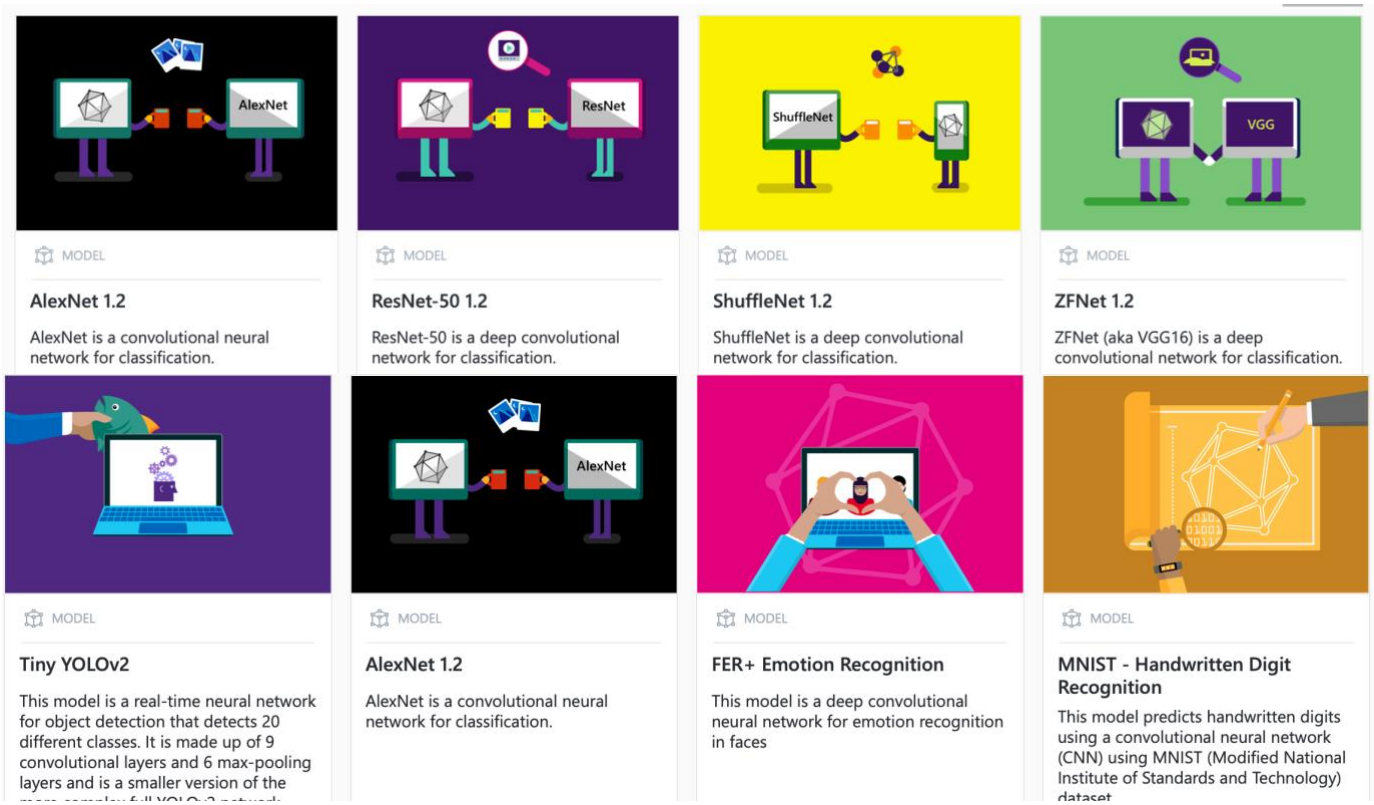
Master and Professional Courses

https://www.rekenkamer.nl/onderwerpen/algoritmes/algoritmes-toetsingskader

APPENDIX C:

PART III AI Model selection, coding, training and testing

- https://gallery.azure.ai/models
- https://towardsdatascience.com/top-6-deep-learning-models-you-should-master-for-killer-ai-applications-13c7dfa68a3



APPENDIX D:

PART IV Critical Reflection & Ethical Considerations

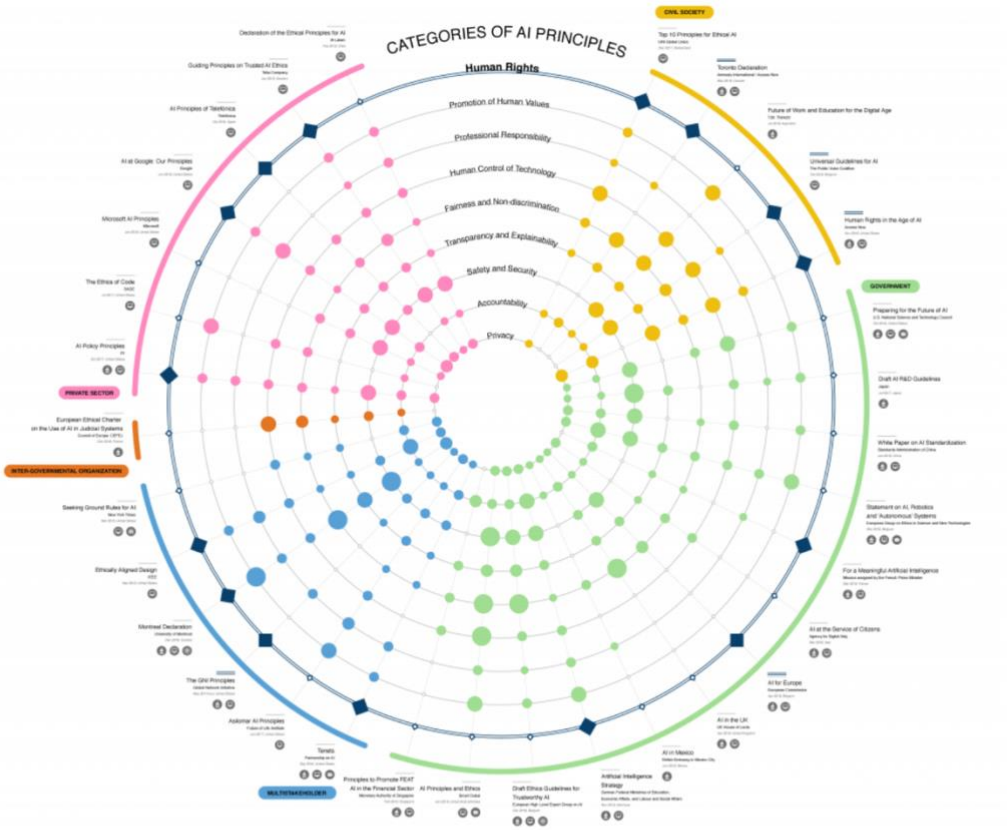
https://cyber.harvard.edu/story/2019-06/introducing-principled-artificial-intelligence-project

Introducing the Principled Artificial Intelligence Project

Jun 7, 2019

ETHICS AND GOVERNANCE OF AI

Hannah Hilligoss *Jessica Fjeld*



Berkman Klein's Cyberlaw Clinic launched the "Principles Artificial Intelligence Project" to map AI principles and guidelines. The team created a data visualization to summarize their findings, and will later publish the final data visualization, along with the dataset itself and a white paper detailing their assumptions, methodology and key findings.