HCAIM Diploma Thesis Guidelines

TO BE COMPLETED, FINALIZED

For the thesis plan to adequately cover the Human Centered AI Masters certificate, the thesis should include:

Regarding AI: a machine learning-based solution to a given problem.

Regarding HC: at least one of the following topics must be present in at least 10% of the scope of the thesis, closely related to the problem to be solved in the thesis:

- ***Ethical MI aspects***
  If there are MI design decisions: analyse the decision using the rational ethical decision method (See: Engineering Ethics in the lesson material).

  Diligent task: if you develop or analyse any specific AI system, establish transparency classification according to IEEE P7001, at least for Users and General Audience stakeholders. See https://ieeexplore.ieee.org/document/9206107

- ***Legal aspects***
  If you are developing or analysing any specific AI system, check: what is the risk classification of the AI in question according to the EU AI Act (currently draft): https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX %3A52021PC0206

- ***Trusted AI aspects***

- ***Explainable AI aspects***

- ***MI security and privacy considerations***
  If you are developing or analysing an AI system for being potentially safety-critical and/or security-related, or any application using personal/sensitive/confidential data for training/testing (self-driving vehicles, face recognition, medical applications, risk assessment, federated learning, industrial control systems, malware detection, etc.), assess some of the related security and privacy risks of solutions (e.g., evasion, poisoning, model stealing, training data extractions, backdoors) and propose potential mitigations.

The HC aspects can be discussed in a dedicated chapter or scattered over several chapters to be discussed together with the main problem to be solved in the thesis. The latter approach is preferred. In this case, please include in each related chapter a short separate, identifiable section summarizing the HC aspects that are addressed in the given chapter.