Example thesis: Fake news detection

Keywords: **[3 to 6 keywords] Example:** AI4Good, Fake News, Social Media, Deep Learning

Background: **[150-300 WORDS] Example:**
The escalation of misinformation related to the massive use of social media has become a challenging problem and great is the effort of the research community in providing effective solutions to detecting it. Fake news has existed for decades, but with the rise of social media the nature of misinformation has evolved from text based modality to visual modalities, such as images, audio. Therefore, the identification of media-rich fake news requires an approach that exploits and acquires information acquired from different multimodal categories and effectively combines them. Multimodality is the key point to really address the misinformation detection challenge, but results are still less explored. More specifically, many different works exist that investigate if a text, an image or a video is fake or not, but effective research on a real multimodal setting, 'fusing' the different modalities, also exploring the social network propagation graph, with their different structure and dimension is still an open problem.

Aim: **[150-300 WORDS, pointed list welcome] Example:**
This thesis will regard the development and evaluation of state-of-the-art multi-modal fake news detection approaches to be applied to reference benchmarks, considering the impact on explainability:

- *comparison between different strategies of textual and visual features identification and extraction, differentiating among the different textual features like news content, Social context features, Users comments*
- *comparison between different strategies for extracting and representing network/propagation-based features*
- *comparison between different strategies for multimodal feature fusion*

Technical aspects*:*
[3 to 6 keywords + percentage] Example:
multi-modal fake news detection, benchmarking, propagation-based features (60%)

Human-centered aspects:
[3 to 6 keywords + percentage] Example:
Fake news, social media, explainability, AI4Good (40%)

Possible research questions:
[150-300 WORDS, pointed list]

References:
[3-6 references, pointed list]
Some background knowledge in the form of papers, learning events or other sources

Host and supervision

Proposer: The thesis is proposed by **[PROPOSER NAME]**, a **[PROPOSER SHORT (up to a few lines) DESCRIPTION]** located in **[PROPOSER LOCATION (INCLUDING NATIONALITY)]**.

Supporting University: The thesis is available for students from:

- **[UNIVERSITY FULL NAME]**, under the supervision of Prof. **[Full name]**.

The stage and thesis period are allocated for a total of **[BASED ON THE UNIVERSITY]** ECTS credits.[1]

[NOTE FOR THE PROPOSERS: Virtually, students from each university can apply to any thesis (see the thesis proposal guidelines). To support the process, proposing parties are recommended to make as many theses as possible available across as many universities as possible, among those in the HCAIM consortium. IT IS UP TO THE PROPOSING PARTY TO ARRANGE A COLLABORATION WITH A PROFESSOR. THESES WITHOUT A SUPERVISOR FROM AT LEAST ONE UNIVERSITY WILL NOT BE PUBLISHED).

Location: the student will be hosted **[TO SPECIFY THE LOCATION AND WHETHER A FINANCIAL SUPPORT IS PROVIDED OR NOT]**

Entry deadline and required documents: the student is required to **[DESCRIBE WHAT THE STUDENT IS REQUIRED TO DO, E.G., VISA, NDA, ETC.]**. To deal with these requirements, the entry deadline is no later than **[ADD ENTRY DEADLINE ACCORDINGLY. MOST OF THE THESIS SHOULD HAVE 31/01/2022 AD ENTRY DEADLINE. THIS MUST BE DECIDED TOGETHER WITH THE SUPPORTING UNIVERSITY (and may be different across different Universities)]**.

Support: [DESCRIBE THE GIVEN SUPPORT: E.G. the student will have access to internal data center composed of several high-end servers equipped with NVIDIA GPUs]. Also, the student will be co-supervised by:

- [SUPERVISOR NAME AND TITLE: (very) short bio]
- ….

Contacts: [EMAIL for University and proposer supervisors]

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1 ECTS = European Credit Transfer System