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## Plan Overview

*A Data Management Plan created using UCT DMP*

**Title:** Implementation and Evaluation of KLM-Style Defeasible Entailment and Explanation Algorithms

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**Template:** UCT Student Generic DMP

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### Project abstract:

In addition to enabling users to capture information about the world and engage in logical analysis, another crucial aspect provided by knowledge representation and reasoning tools is the inclusion of explanation capabilities. These representations serve a significant purpose by helping users understand entailments, extracting implied knowledge, and making it explicit through logical deductions. By acknowledging and appreciating the intricate nature of results produced by the KLM-style defeasible reasoning, this paper seeks to explore explanations by identifying the critical gap in the current discourse and, more importantly, the absence of comprehensive explanation facilities for these complex outcomes. We argue for an explanation framework based on justifications to clarify inferences from defeasible reasoning. Within this context, the algorithms discussed for rational closure and justification work effectively and are fine-tuned to efficiently generate explanations. Additionally, we provide a user-friendly software system tool that implements algorithms for defeasible entailment and explanations. We conceive of this tool being employed as a debugging service aimed at addressing intricacies or issues within knowledge bases

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### Copyright information:

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# Implementation and Evaluation of KLM-Style Defeasible Entailment and Explanation Algorithms - Student Outline DMP

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## 1. General guidelines

**PURPOSE OF THIS TEMPLATE** - The purpose of the Outline DMP is to indicate your initial plans for how your data will be collected, shared and stored, and to give you a chance to think about these data-focused aspects of the research process. As you begin doing your research, your data process may change, and it is perfectly acceptable to change your data management plan to accommodate the changes in your research process. Indicate below that you understand the purpose of completing this Outline DMP template.

- I understand the Outline DMP template is a projection of my anticipated data management planning requirements and should be updated as my project develops.

## 2. Authors and supervisors

**PROJECT NAME** - Replicate the title of your project, dissertation or thesis exactly as it appears in your proposal document.

Implementation and Evaluation of KLM-Style Defeasible Entailment and Explanation Algorithms

**PERSONAL DETAILS** - Indicate the name(s) and student number(s) of the student(s) who will be involved in this project, dissertation or thesis.

Chipo Hamayobe - HMCYHI001

**SUPERVISOR(S) DETAILS** - Indicate who will supervise this project, dissertation or thesis. If you do not yet have a supervisor, leave this section blank.

Professor Thomas Meyer

## 3. Data Collection/Generation

**COLLECTION OF ORIGINAL DATA** - Indicate whether or not you intend to gather/produce original data for your study, and provide a brief description of the kind of data you think you will collect. If you are unsure at this time, indicate what you think you are most likely to collect. If you are not intending to gather or collect your own data, declare that here.

- I do not intend to collect original data.

**USE OF EXISTING DATA** - Indicate if you intend to re-use existing data, either from online searches or from datasets provided by your supervisor, lab, or funder. If you are not intending to re-use existing data, declare that here.

- I do not intend to reuse existing data.

**DATA SHARING** - Indicate whether or not you are intending to publish your research data. If you are, indicate where you are intending to publish your data and under what licensing conditions, such as Creative Commons. If you are not intending to publish your data, provide reasons and reference the appropriate ethical considerations, commercial applications/patenting ambition, or data re-use agreements that prevent you from publishing your data.

- I do not intend to share my data because of confidentiality issues.

## 4. Data Storage

**ANTICIPATED DATASET SIZE** - Indicate the estimated size of your completed dataset, and indicate whether or not you will need to access additional data storage facilities. If such storage is not provided by your unit or department, you may need to factor in the cost of purchasing additional storage space.

- 20GB or less

The anticipated dataset size is less than 20GB. Additional storage facilities will not be required

**DATA BACKUPS** - Indicate how you plan to ensure your data is secure and retrievable in case of errors or hardware failure. Describe what procedures you will put in place to back-up copies of your data and where they will be stored.

- I intend to backup my data using a service provided by UCT (UCT GoogleDrive, UCT OneDrive, Netstorage, ZivaHub etc.).

## 5. Data Centre(s)/Repositories

**DATA CENTRES/REPOSITORIES** - Once your project, dissertation or thesis is complete, it is advisable to curate and archive your completed dataset with an established data centre or repository. Note that you should archive your data even if you are not intending to publish it. Check with your supervisor or funder if you are required to deposit your data in a specific repository, or declare that you will deposit the data in ZivaHub (see the Guidance section).

- At the end of my study, I will deposit my data on ZivaHub.

**METADATA** - Metadata is descriptive information that others will need to make sense of your dataset. Metadata includes things like study descriptions or abstracts, study instruments (sample collection schedules, codebooks for variables, survey instruments, etc.), subject codes, and keywords. Indicate what metadata will accompany your curated dataset.

The completed dataset will be accompanied by keywords, a short description taken from my dissertation abstract and relevant paragraphs on the data process taken from my methods section.

## 6. Budget

**BUDGET** - Indicate any costs specifically relating to the management and curation of your data, such as purchasing additional storage space, digitisation of physical media, data storage or curation charges, and data audits. Most student research will be able to make use of free options provided by UCT and will not have to budget for data costs.

- I do not anticipate any data costs as my data is less than 10GB, and I will be using a storage system provided by UCT (UCT GoogleDrive, UCT OneDrive, Netstorage, ZivaHub, etc.) to curate my data.