**MET CS 664-A1 Fall 2020**

**Artificial Intelligence Due: 30 Sep 2020**

# Semester Design and Implementation Project Proposal

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| Name: | Machida Hiroaki |
| Project Title: | Answer to “Meaning of Life” by RNN Language Model |
| Computer Platform (OS, etc.): | MacOS |
| AI Tools utilized (can be none): | deep-learning-from-scratch-2 |
| Programming Language(s): | Python |

**Project Description: (Be sure to include the area(s) of Artificial Intelligence you will focus on)**

The purpose is to get the answer to “The Answer to the Ultimate Question of Life, the Universe, and Everything is…” by RNN Language Model.

The approach is to build an RNN Language Model, train it with the textbook of this course, “Artificial Intelligence: A Modern Approach”, and generate a sentence following the question above.

It will be built from scratch but refer to a book and Github repo.

\*ゼロから作るDeep Learning ❷ ――自然言語処理 (https://www.oreilly.co.jp/books/9784873118369/)

\*deep-learning-from-scratch-2 (https://github.com/oreilly-japan/deep-learning-from-scratch-2)

The question is an hommage from a book, “The Hitchhiker's Guide to the Galaxy”.

Output image (sample):

The Answer to the Ultimate Question of Life, the Universe, and Everything is to make a very clever AI.

**What I/We will learn from this Project: (Why did you choose this Project?)**

I will learn the basic model of Natural Language Processing, and also how to implement it. I have learned machine learning algorithms on the Machine Learning course, but advance technologies, such as Natural Language Processing, Voice Recognition, and Image Recognition, are not covered. Among those materials, Natural Language Processing is easier to learn due to the textbook referred, so I choose this topic. Based on this project, I may be able to expand my understanding to more advanced Natural Language Processing, Voice Recognition, or Image Recognition.

**Potential Implementation Problems: (What do you think will give you the most trouble?)**

Design and implementation of RNN Language Model. Since RNN Language Model is complex, it might not be easy to create a design, and implement. If there are any bugs, it might be hard to identify and modify the root cause. That risk can be mitigated by referring to the existing project on GitHub.

Also, one of other problems would be whether text of the textbook of this course is sufficient to train the RNN. If the answer is not good enough, additional training dataset needs to be found.