Semantic Analysis of Emergent Numerals in Multi-Agent Autonomous Communication system

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Abstract

This skeleton demonstrates how to use the `infthesis` style for MSc dissertations in Artificial Intelligence, Cognitive Science, Computer Science, Data Science, and Informatics. It also emphasises the page limit, and that you must not deviate from the required style. The file `skeleton.tex` generates this document and can be used as a starting point for your thesis. The abstract should summarise your report and fit in the space on the first page.

Acknowledgements

Any acknowledgements go here.

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Chapter 1

Introduction

NLU is a long-standing challenge.

Only massive textual materials are not sufficient for computers to understand our language.

We need import these “biases” into computational agents.

It is necessary to facillate agants develop various kinds of characteristics of natural language during autonomous communication.

1.1 Evolutionary Linguistics

Such question is a critical question in evolutionary linguistics.

However, previous works have to pre-define the basic elements of language.

1.2 Deep Reinforcement Learning and Its Application in Grounded Language Learning

With the recent development of DRL, we do not need to pre-define any linguistic element and thus can simulate the emergence of preliminary linguistic phenonmanon.

With these promising progresses in GLL and characteristics of numerals, this project proposes a new simulation methods of the emergence of numeral systems and also methods to analyse them.

Chapter 2

Background

A dissertation usually contains several chapters.

2.1 Computer Simulation Methods in Evolutionary Linguistics

2.2 Multi-agent Games in Grounded Language Learning

Chapter 3

Set Generation Game and Models

3.1 Game Description

One hypothesis of our work is that, the linguistic hypotheses can by implied by game dynamics.

3.1.1 Game Procedure

3.1.2 Language Game as a Markov Desicion Process

3.1.3 Numerals in the Game

3.2 Proposed Models

3.2.1 Set2Seq2Seq Models

3.2.2 Baseline Models

Chapter 4

Experiment Results and Analysis

Chapter 5

Conclusions

5.1 Final Reminder

The body of your dissertation, before the references and any appendices, *must* finish by page 40. The introduction, after preliminary material, should have started on page 1.

You may not change the dissertation format (e.g., reduce the font size, change the margins, or reduce the line spacing from the default 1.5 spacing). Over length or incorrectly-formatted dissertations will not be accepted and you would have to modify your dissertation and resubmit. You cannot assume we will check your submission before the final deadline and if it requires resubmission after the deadline to conform to the page and style requirements you will be subject to the usual late penalties based on your final submission time.

Bibliography

Appendices