Abstract

Over the past forty years, significant research has been done on story/narrative generation, in which the computer is the author. While it is impossible to quantify a human writer’s inspiration, we can consider a common exercise that authors perform: namely ‘writing prompts’. A writing prompt is just a topic or idea around which to start writing. The prompt can simply be a few words, which becomes the basis for a story. Our automatic story generation system, will select a few random words as parameters (i.e. ‘inspiration’) for driving the ‘creative writing’ process. Here we present the results generated by the initial phase of system development and testing of the word selection components.

Introduction

The goal of our story generation system is not to understand how human authors create stories, but to focus solely on the generation of what may be perceived as ‘creative’ results. Utilizing the Internet, a few random words will be selected which will form the basic parameters for generating a fictional story. Also, since a machine has no understanding of word concepts within any specific context, we will utilize the Internet (and existing ‘Concept Knowledge’ systems) to find the context for the selected words, thus guiding the story generation process. The systems used are:

WordNet (Princeton University) - An English lexical database of nouns, adjectives, verbs and adverbs. ConceptNet (MIT) - A ‘commonsense knowledge’ database which is used to perform textual-reasoning in order to make sense of the everyday world.

System Design

Following the diagram, the first three flows have been implemented:

1. Via the Internet, use WordNet to retrieve 3 random words. Forward the selected words for concept lookup.
2. Also forward the selected words for Concept Correlation.
3. Via the Internet, use ConceptNet to lookup the conceptual meaning of the selected words. There will usually be multiple different concepts found. Forward all concepts for Concept Correlation.

Written in the Python programming language, our program reads three random words from the WordNet corpus. Using WordNet gives the advantage of selecting words by POS (part of speech) and frequency of use. For the initial tests, we selected three random words comprised of two nouns and one verb. Since WordNet provides multi-word and hyphenated phrases, these have been filtered out for our tests. Then each of the selected words is used to search ConceptNet. The results being presented here are sample outputs from the word selection and concept lookup code.

Story Generation Block Diagram

Generated Results

The program selected three random words and retrieved a list of concepts. Which of the concepts should be selected? Our selection criteria should be based upon some cohesion between the concepts and the potential for story generation. From a human perspective, we can see the correlation between:

Search word – orchestration: Concept – mastermind, plan_and_direct
Search word – inscription: Concept – inscription_on_tombstone
Search word – erase: Concept – kill, cause_to_die

These concept selections could generate a story about an evil mastermind who plans to kill his mortal enemy and has already inscribed the tombstone. Our goal is for the system to automatically derive a similar (or at least coherent) storyline.

The results generated by the current system implementation are clearly just the beginning. However, this work forms the foundation for development of additional and more complex system components.

References: