System and Method for Artificial Intelligence Story Generation Allowing Content Creation

Tech ID: 33051 / UC Case 2019-742-0

BACKGROUND

There are several challenges to automatic story generation, including composing a passage of text that is coherent and fluent. A fundamental challenge of automatic story generation is the need to generate longer and more interesting sequences of text. Stories also need to stay consistent across a topic and theme. Current models generate the entire story at once – the user can only accept or reject the story. However, when humans write, we incrementally edit and refine our texts. Motivated by this, researchers at UC Santa Cruz have developed techniques for artificial intelligence (AI) assisted story generation that give the user more control over the generated story by allowing the user to introduce content as the story progresses. The experience is an interactive one and the resulting story is more satisfactory to the user.

TECHNOLOGY DESCRIPTION

The invention involves techniques where the system accepts from a user a mid-level sentence abstraction in the form of cue phrases. Cue phrases inform the system of what the user wants to happen next in the story and also give the user more control over what is being generated. The invention includes two approaches: Cued Writer and Relevance Cued Writer. The models share an identical overall encoder-decoder based architecture. They adopt a dual encoding approach where two separate but architecturally similar encoders are used for the context and the cue phrase. Both these encoders advise the combiner/decoder, which in turn generates the next sentence. The models use the same encoding mechanism and differ only in their decoders.

These models outperformed other models on Perplexity and BLEU scores. The models also generate less repetitive content compared to other models. Human evaluation was also favorable.

APPLICATIONS

- semantic analysis
- machine learning
- automatic story generation
- artificial intelligence
- writing tools
- creative writing
- assistive technology
- editing
- learning methods
- phrasal analysis
- neural network artchitecture

ADVANTAGES

- interactive
- adaptive
- coherent
- on-topic
- personalized
- allows for supervision

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OTHER INFORMATION

KEYWORDS

semantics, machine learning, automatic story generation, artificial intelligence, writing tools, creative writing, phrasal analysis, neural network

CATEGORIZED AS

- **Computer**
  - Software

RELATED CASES

2019-742-0

INTELLECTUAL PROPERTY INFORMATION

Country	Type	Number	Dated	Case
United States Of America	Issued Patent	11,520,971	12/06/2022	2019-742

RELATED MATERIALS

- Cue Me In: Content-Inducing Approaches to Interactive Story Generation - 12/04/2020

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