

Can we automatically generate the script for a theatre play?

Automatic Generation of Theatre Play Scripts (a project suggestion)

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Project Idea

R.U.R. was written by Karel Čapek 100 years ago: a play about robots written by a human.



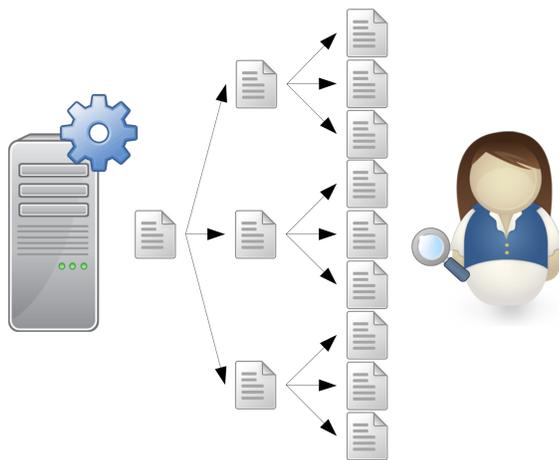
Today, could robots write a play about humans? And could robots also play in it?

Approach

- Deep neural networks – Transformer sequence-to-sequence architecture
- Text expansion – inverse of text summarization (title → article)
- Hierarchical generation
 1. generate random title
 2. title → characters, plot summary
 3. plot summary → act summaries
 4. act summary → scene summaries
 5. scene summary → dialogues, stage directions
- Human in the loop: system generates multiple options, a human selects the best one (we just need to generate 1 play)

System Architecture

Hierarchical text expansion using neural networks and human supervision.



Problems to Solve

Aboutness

Generated texts tend to look natural, but have no deeper idea behind them.

→ Explicitly generate the idea first? (Do we have data for that?)

Divergence

Generated texts tend to be on-topic first, but then diverge to another topic.

→ Generate end-to-start? (The ending of a scene is the most important.)

Consistency

Generated texts tend to be contradictory.

→ Generate important information first? Explicitly co-generate a “knowledge base”?

Characters

The characters in the play should have consistent distinct personalities.

Beauty

Gradation, rythm, symbolism, reference to other works...

Existing Works

SciGen

Generating “scientific” papers

Grover

Generating fake news articles

Sunspring

Generating a film script

Available Data

- 600 theatre plays in Czech
- Wikipedia plot summaries
- Films and TV series (subtitles, ČSFD/IMDB summaries)
- Belletry, news articles...

Project Timeline

May 2019

Conception of the project

Summer 2019

Forming a team, planning the project, gathering data

Autumn 2019 – Spring 2020

Research and development

Summer 2020

Final version

Autumn – Winter 2020

National theatre rehearsals, preparation of robots

23 January 2021

Premiere of the generated play

Team

Coordinator

Tomáš Studeník (innovator)

ÚFAL MFF UK

Rudolf Rosa, Tom Kocmi, Ondřej Dušek, Ondřej Bojar, David Mareček, Petra Barančíková, Jonáš Vidra, Jindřich Vodrážka, Jindřich Libovický

National Theatre

(we don't know yet)

