AI: When a Robot Writes a Play

In 2019, the innovator Tomáš Studeník came up with an idea to celebrate one hundred years since the first performance of Karel Čapek's play RUR (which brought the word "robot" in to the world) in an unconventional way – by a theatre play written not by a human, but by artificial intelligence. Based on this idea, a team was formed consisting of computer scientists from Charles University Faculty of Mathematics and Physics (led by computational linguist Rudolf Rosa) and theater makers from the Švanda Theater and students of The Academy of Performing Arts in Prague (led by the head of the Švanda Theater, director and pedagogue Daniel Hrbek). By mutual cooperation and debate, they decided to answer the question of whether artificial intelligence is able to write a play and how it will behave when processing such a task.

In the initial phase, it was necessary to translate the basic principles of drama into codes of the programming language governing the behavior of AI, and on the other hand to explain to theater makers how to formulate these requirements, so that computer scientists can work with them. The so-called „machine learning method" was also used; AI read a large number of available scripts and other texts and based on the collected data it created its own "rules for creation". While generating trial dialogues, the whole system started to improve itself gradually - until the moment when only minor human factor interventions were needed, or only on the level of usual dramaturgical input.

Since May 2020, the computer has been generating scenes with a certain theme, which would then make it easier to chain them together. The theme was: images from the life of a robot. Theater makers always entered the basic parameters: who, where and with whom he talks (it is always just a dialogue of the robot with one other person) and added two initial lines. The rest of the writing was done by the software. And so, the character-robot meets various types of people, he approaches them in his own way and he compares his experience of the world with theirs, with their misery and joy. And almost always the elementary questions of our being were raised before him, directly or in references: What is the meaning of life, birth, dying, love...? The text was written in English and translated into Czech through machine translation and revised by an experienced translator. Dramaturge David Košťák selected the most successful dialogues and then the creators from the Švanda Theater arranged them in a way to tell a comprehensive story about the robot's journey through human society. Thanks to the principle of the journey and autonomously functioning dialogues (which are somewhat naive and yet somehow mysteriously essential), the play can resemble a futuristic version of the Little Prince and his journey through the planets and meeting their inhabitants.

A team of theatre makers is currently preparing a production based on the resulting text; the artistic concept is being created at the moment and the fundamental phase of rehearsing will take place in January 2021. Due to anti-coronavirus measures, the premiere will take place via stream on social networks. In the following months, we would like to present the production once or twice a month as part of the Švanda Theater Studio stage repertoire. The performance should always include a brief introduction from the representatives of both teams and especially after the performance a longer debate with project developers from computer science and theater and ideally a guest who would be able to incorporate questions emerging around AI into a broader philosophical context.

The performance *AI: When a Robot Writes a Play* is the final part of the first phase of the THEaiTRE project, which in the upcoming months aims to further improve the generating system and to try to find out whether AI (and to what extent) can handle not only dialogues but also the structure of the whole play.

The fact that this is not an event for only a narrow circle of "insiders" is proved by the fact that the media and the general public at home and abroad are showing interest in the event, but also the fact that the THEaiTRE project has received significant support within the framework of The Technology Agency of the Czech Republic (TAČR) grant and it is being held under the auspices of the Ministry of Foreign Affairs of the Czech Republic.

For more information: https://www.theaitre.com