## Rudolf Rosa (Univerzita Karlova), David Košťák (Švandovo divadlo)

- Univerzita Karlova, Matfyz, Ústav formální a aplikované lingivistiky = Charles University, Faculty of mathematics and physics, Institute of formal and applied linguistics
- Švandovo divadlo = Švanda theatre
- DAMU = The Academy of Performing Arts in Prague, Theatre Faculty
- CEE Hacks

# THEAITRE

Al: Když robot píše hru





## AI: When Robot Writes a Play

The project TL03000348 THEaiTRE: Umělá inteligence autorem divadelní hry is co-financed with the state support of Technological Agency of the Czech Republic within the ÉTA 3 Programme.





### 25. ledna 1921

- o premiéra R.U.R.
- člověk o robotech (a lidech)

#### oslavit

- inovátor Tomáš Studeník
- hra, robot o lidech (a robotech)
- automaticky generovat scénář divadelní hry

### 26. února 2021

- o premiéra hry Al: Když robot píše hru
- > 90% scénáře přímo od umělé inteligence
- minimální lidské zásahy
  - vstupy
  - jinak podobně jako u lidského autora
  - možnost odmítnout výstup
  - vložit repliku
  - přeuspořádat scénář

### 25th January 1921

- premiere of the theatre play R.U.R. by Karel Čapek
- a theatre play about robots (and humans) written by a human

### 26th February 2021

- premiere of our automatically generated theatre play
- a theatre play about humans (and robots) written by artificial intelligence
- automatically generate theatre play scripts
- human intervention
  - provide inputs
  - reject output
  - insert a line
  - rearrange the script

## Jak je to uděláno

- jazykový model GPT-2 od konsorcia
  OpenAI
- nástroj, načtené miliony článků z internetu
- dáme mu vstup, začátek textu
- automaticky si vymýšlí možné pokračování toho textu
- slovo po slově, repliku po replice
- jaká slova obvykle následují po jakých slovech, jak vypadají texty
- kontext asi předchozích 500 slov
- automatický strojový překlad do češtiny

- GPT-2 language model by OpenAI
- A human initializes the play with a few lines
- Al generates a fixed number of replies
  - The human can continue generating the story...
  - Or choose to re-generate lines
    beyond a certain point
- automated machine translation to Czech

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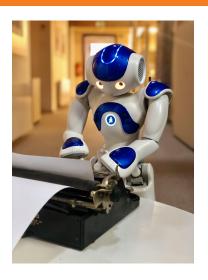












# THEAITRE

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## **THEaiTRE Output Examples**

## Sample output: R.U.R.

### Input

Radius. Master, the machines will not do the

work. We cannot manufacture Robots.

1st Robot. We have striven with all our might.

We have obtained a billion tons of coal from the earth. Nine million spindles are running by day and by night. There is no longer room for all we have made. This we have accomplished in one year.

Alguist. For whom?

Radius. For future generations—so we

thought. But we cannot make Robots to follow us. The machines produce only shapeless clods. The skin will not adhere to the flesh, nor the flesh to the bones.

2nd Robot. Eight million Robots have died this

year. Within twenty years none will be

left.

1st Robot. Tell us the secret of life.

#### Output

Alquist. What secret?

1st Robot. To live.

Alquist. The robots will not live. They can only die.

2nd Robot. They have made us for their own use. They have not allowed

us to live.

1st Robot. What do you have to say?

Alquist. I can only say this: the machines have been made for the use of

men, not of machines. I will not permit the robots to have life.

2nd Robot. If that is so, what do you propose to do? Alquist. If you don't agree to my terms, kill me.

2nd Robot. You are a terrible man!

Alquist. I am a man who believes in what he has done.

2nd Robot. Then let me destroy you. Alquist. What are you doing?

2nd Robot. I have been trying to do you harm. I have been trying to kill

you.

Alquist. I will not be harmed by a machine.

2nd Robot. Then let me be destroyed. Alquist. What are you doing?

2nd Robot. I have been trying to be killed by you.

## Turing test: Which one is generated?

### Input

Claudia:

/Christian hears a faint knock. He opens cautiously. In the doorway, sitting in a wheelchair, is a girl, about seventeen - Claudia - a beautiful girl, who is charged with serenity and inner strength (...) The actor stares at her in disbelief./

Nice evening, isn't it? Am I interrupting? I can come back another time.

Christian: What do you need?

Josef Doležal: Klaudie

#### Continuation A

Do you know the story of Claudia:

> Jesus? He was a child, born in a stable in Bethlehem, raised by a

man named Joseph.

Christian: Oh yes. What kind of a story

is it?

Claudia: You don't want to know it?

Christian: No!

Claudia: He was always a humble

child, never arrogant, always helpful to his friends. He came to the house of Joseph and his wife Marv. had a room next to them. He was a nice boy. Joseph's wife asked him why he sat at the corner of the bed and read the Bible to

the children, especially the little boy. Joseph answered him, "He is a

good boy. I'm a good father, I love mv children."

Continuation B

Claudia: Nothing. I mean, something.

Christian. What's that?

Claudia: I just want to talk to you. Mr

> Christian. I'm doing this thing for school, if you're not in a hurry. And

vou'd have time for me.

Christian: Well, I'm not in a hurry. Fine,

would you like a drink?

Claudia: Claudia Colt. nice to meet

vou.

Coffee? Tea? Rum? Christian. Claudia: No. thank you.

Christian. Claudia? Colt Claudia:

Christian: Yeah, I never had much of a head

for names.

Claudia: Neither did I.

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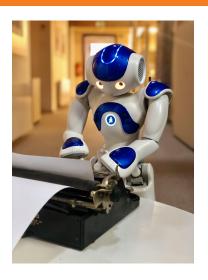












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