STAP:
Simultaneous Translation and Paraphrase
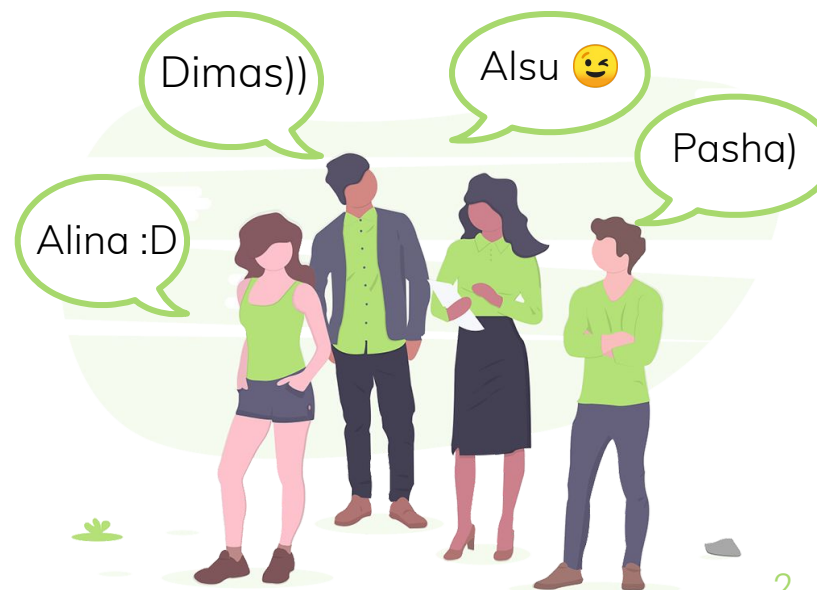
Hello!

We are:

Alina Ilalova - @a3198i
Dmitry Grigorev - @gridmi
Alsu Vakhitova - @palette_knife25
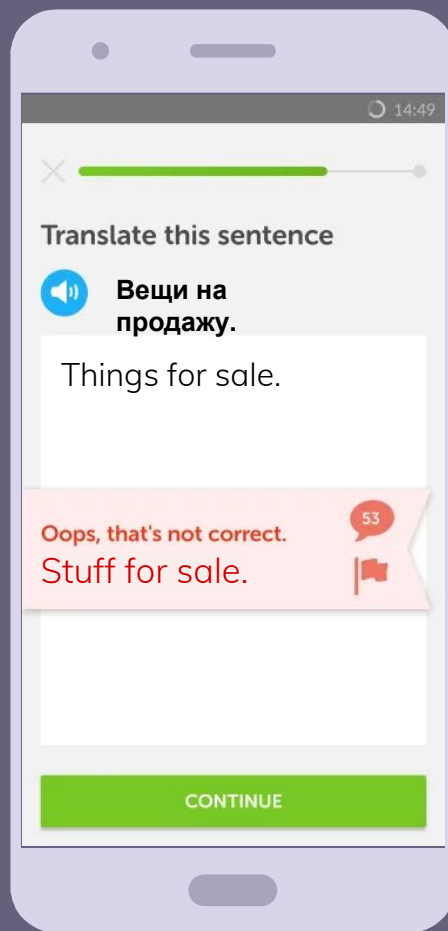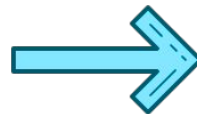Pavel Kozlov - @KozlovPA

1.
Problem

One-to--one
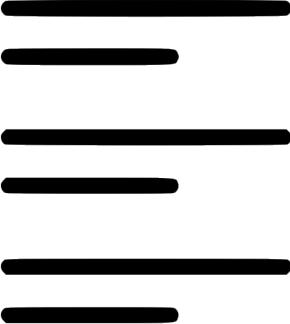

Translate this sentence

Вещи на продажу.

Things for sale.

Oops, that's not correct. 53

Stuff for sale.

CONTINUE

Our idea

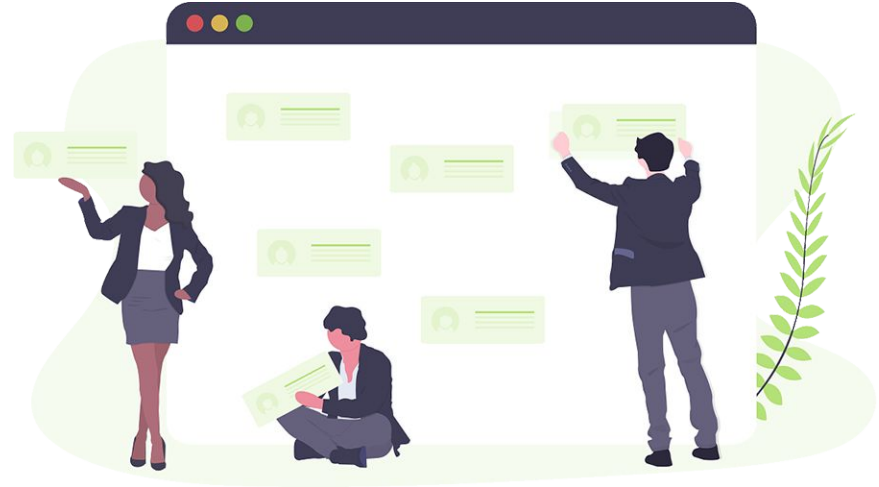Знаете, ведь так мы и умираем - в одиночестве.

STAP

1
2
3

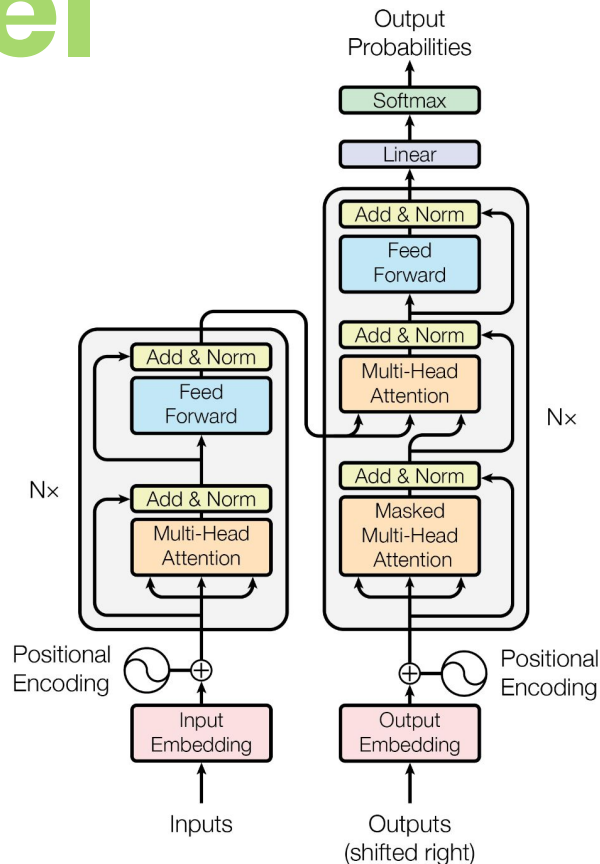# Potential users

new language learners

2.
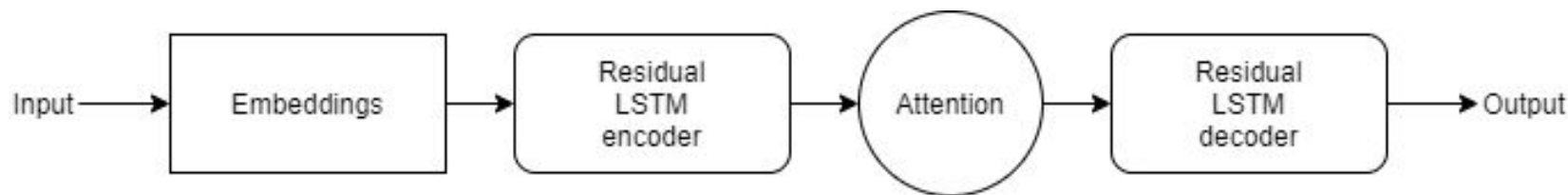# Implementation details

Translation model

pre-trained FairSeq
model by Facebook AI
Research

Paraphrase model

- Trained on MS COCO (also tried on WikiAnswers)
- Tensorflow
- 100 000 iterations (~3 hours)

Input → | Embeddings | → | Residual LSTM encoder | → (Attention) → | Residual LSTM decoder | → Output

MS COCO dataset

A man holding a child while standing at the fence of an elephant zoo enclosure.

...

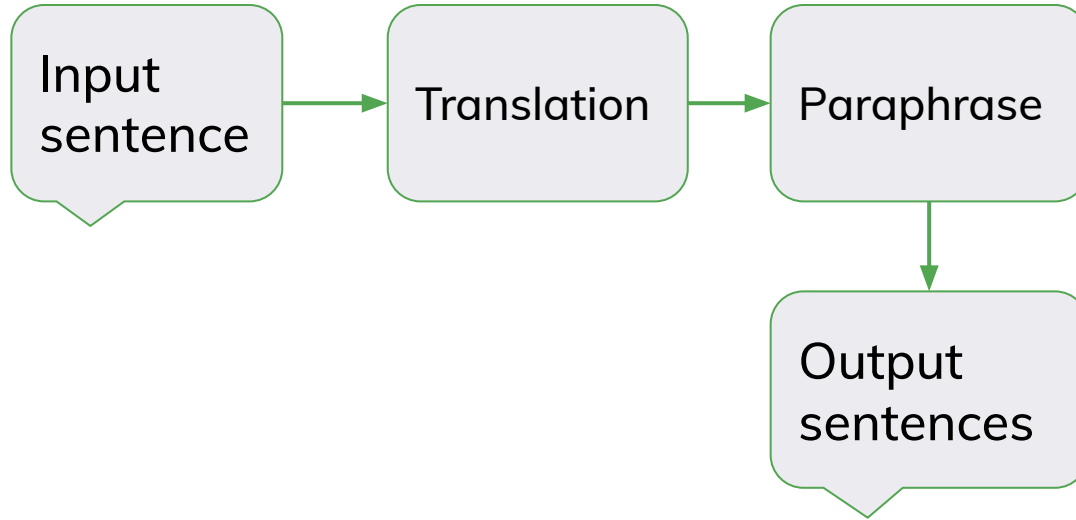The horse and puppy are separated by the mesh fence.

...

WikiAnswers dataset

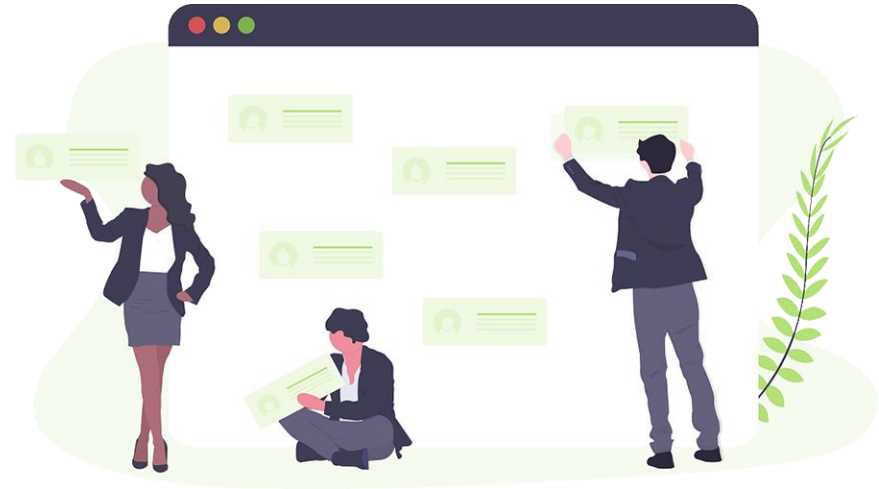clusters of questions tagged by WikiAnswers users as paraphrases

Cluster 1
Q: *"Who was the Britain's leader during WW1?"* temporal
Q: *"Who ran Britain during WW1?"*
Q: *"Who was the leader of Britain during World War One?"*
A: [https://en.wikipedia.org/wiki/h._h._asquith,
https://en.wikipedia.org/wiki/david_lloyd_george]

Cluster 2
Q: *"largest city located along the Nile river?"* comparison
Q: *"largest city by the Nile river?"*
Q: *"What is the largest city in Africa that is on the banks of the Nile river?"* A: [https://en.wikipedia.org/wiki/cairo]

Cluster 3
Q: *"John Travolta and Jamie Lee Curtis acted in this film?"* compositional
Q: *"Jamie Lee Curtis and John Travolta played together in this movie?"*
Q: *"John Travolta and Jamie Lee Curtis were actors in this film?"* A: [https://en.wikipedia.org/wiki/perfect_(film)]

Cluster 4
Q: *"Who is the first human landed in Mars?"* empty answer
Q: *"Who was the first human being on Mars?"*
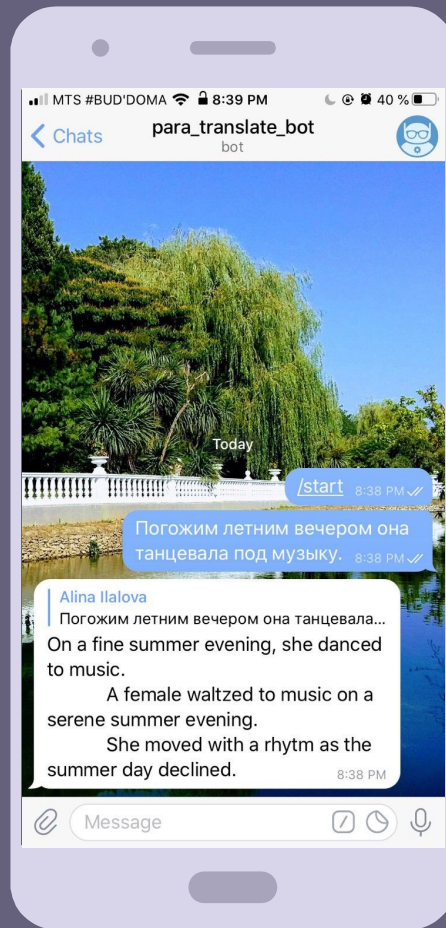Q: *"first human in Mars?"* A: []

Final workflow

Input sentence → Translation → Paraphrase → Output sentences
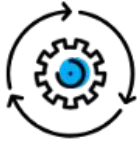
3.
Application Production Techniques

Telegram Bot

Continuous Integration Pipeline

Commit change	Trigger build	Build	Notify of build outcome	Run tests	Notify of test outcome

Scrum Activities

Thanks!

Any questions?