Tatiana Shavrina
Andrey Chertok
CDS Office, Sberbank

Sberbank
Artificial Intelligence

digital manager

AGI-assistant for the leaders

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Why do we need AGI to happen?

- Future Industry requires people to constantly relearn
- People can relearn a limited number of times - but not AGI
- AGI as a developed system should be able:
  to independently obtain new abilities,
  automating not only simple actions,
  but also the decision process itself

How AGI can help the Leaders

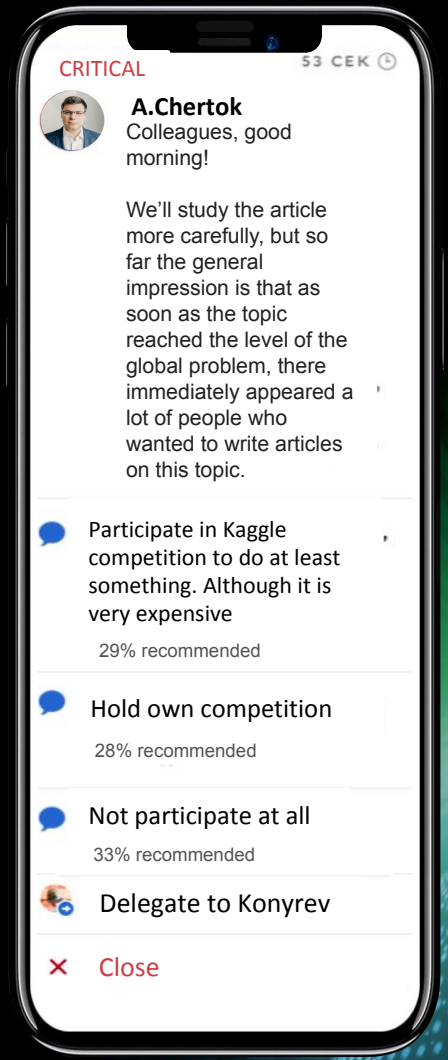
How can we help managers?

Approximately 70% of the manager's time is spent on routine and trivial tasks such as mail checking, meeting minutes, creating reports, etc.

Goals: routine automation, decisions support, cognitive decline, cognitive biases prevention and improving the quality of decisions

Digital Manager simplifies decision-making and routine operations of a manager relying on AGI models

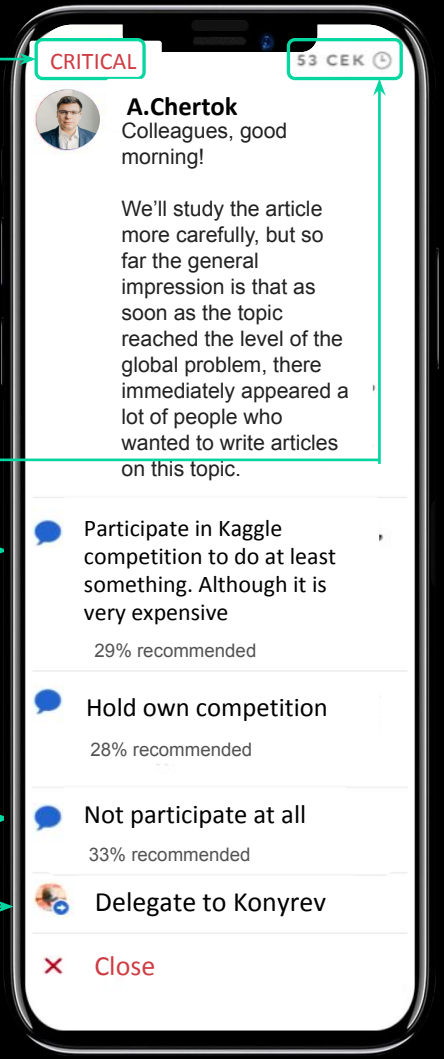
- Task delegation,
- Calendar automation,
- Help in choosing from alternative solutions,
- Prevention of cognitive bias in decision making



digital manager

CURRENT FUNCTIONALITY (AI-MODELS):

1. MAIL IMPORTANCE RATING
2. MAIL READING TIME ESTIMATION
3. EXTRACTING ALTERNATIVE SOLUTIONS
4. CHOOSING THE BEST OPTION
   Precision 90% (at post message level)
5. EXTRACTING QUESTIONS, REQUESTS AND ATTACHEMENTS
6. TASKS DELEGATION MODEL
   Precision 75%



DREAM-GOAL: automation of 50% of decisions for the middle-management

DREAM-FUNCTIONALITY:

- Decision support;
- Prioritization of information flow;
- Routine automation;
- Cognitive Biases Prevention together with the Sberbank Neurolab);
- Connecting new data sources;
- Meetings support;
- Auto-summarization of mails, meetings protocols, etc.
- Voice-readiness;

Moving to Stronger AI with NLP

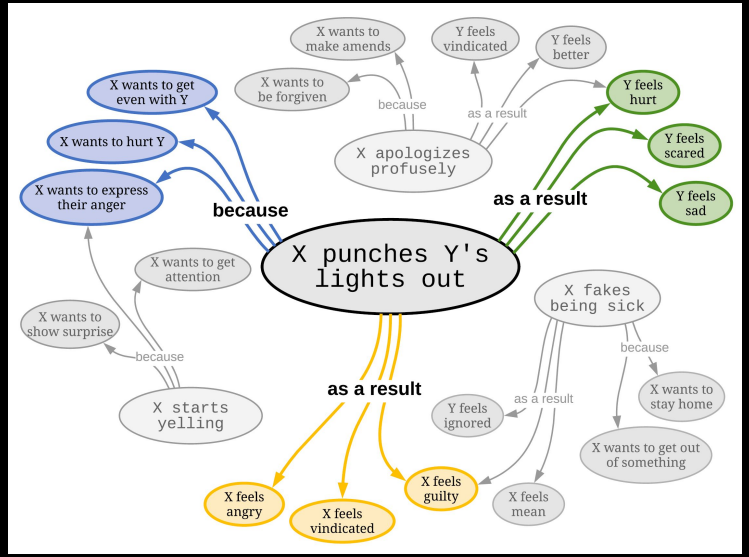
From Lower to Higher Levels of modelling intellect

Emotional State:

- Checking the emotional state of the manager - Sentiment Models
- Checking the intents of the addressees - Event2Mind model
- Classifying levels of politeness and enforcement

Logic:

- Classifiers defining the illogical proposals



AllenNLP

An open-source NLP research library, built on PyTorch

From Lower to Higher Levels of modelling intellect

Making a better choice:

- Choice of Plausible Alternatives model (RuBERT) on StackExchange - IT + Product Managing
  Accuracy 90%
  (based on Russian SuperGLUE project)

Automatic Delegation:

The goal was to develop an algorithm that will recommend the most appropriate person who is able to do a task based on the text description of the task

As an intermediate problem - the task of choosing the best person a post message may be forwarded to.

Current Solution: Multi-Label classification with DeepPavlov RuBERT

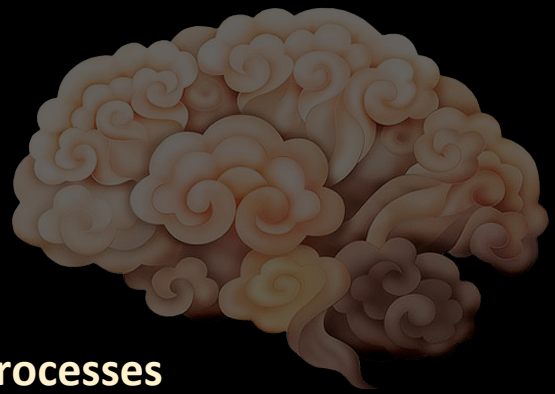
75% F1-measure on the test set

DeepPavlov

Cognitive studies help! Building a Digital Assistant to Prevent Bias

AGI to Help the Leaders:

- An overabundance of information is a problem, so we aggressively cut off everything unnecessary. Then the noise becomes a signal.
- Misunderstanding confuses us, so we are actively completing the picture. The signal becomes history.
- We have to act quickly, so we immediately jump to conclusions. Stories become decisions.
- This does not make it easier for us, so we are trying to remember the most important things. The solutions give us information to adjust the models of the world and ourselves.



Technologies can help us on every stage of our decision processes

Preventing Cognitive Biases

A cognitive bias is a systematic pattern of deviation from norm or rationality in judgment.
Individuals create their own "subjective reality" from their perception of the input.
Using the works by Amos Tversky and Daniel Kahneman

Bringing together

- Biases specific to groups (such as the risky shift) versus biases at the individual level.
- Biases that affect decision-making,
- Biases, such as illusory correlation, that affect judgment of how likely something is or whether one thing is the cause of another.
- Biases that affect memory
- Biases that reflect a subject's motivation

Thank you!