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# «MIST: Aerospace - 2021: Advanced Technologies in Aerospace, Mechanical and Automation Engineering»

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## «Development of a chatbot for a car service»

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# Problem statement

- The problem of text recognition is considered and the main stages of the solution are highlighted.
- task1: to analyze companies that provide the appropriate range of services and their automated interaction;
- task2: to study the basic approaches to text recognition (information message);





# Problem statement

- The problem of text recognition is considered and the main stages of the solution are highlighted.
- task3: to consider the main types of neural networks for text recognition (information message);
- task4: to develop an intelligent chatbot for the company digital space;
- task5: to conduct an experimental check of the chatbot operation.



# Solution methods

- An artificial neural network (ANN) is a mathematical model as well as its software or hardware implementation, built on the principle of the organization and functioning of biological neural networks – networks of nerve cells of a living organism.
- Batch Normalization is a technique used for training neural networks that standardizes the input data for the layer and makes it possible to speed up and stabilize the training process.
- A convolutional neural network (CNN) is a special neural network architecture proposed by Jan Lekun, initially aimed at efficient image recognition.



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# Conclusions

## Results, implementation

At the moment the smart chat bot is only able to process simple files. Files that are presented in the form of “question – answer” were used. For a more complex image model that includes an expanded response, the text detection needs to be adjusted. For example: building a sales schedule or supply chain. It is necessary to make a list of recommendations for the format of the downloaded file when developing.

Also at the moment the following is being developed: product recommendation according to "favorite" brands; recommendation of a related product, if necessary; product recommendation if it is "economically" reasonable for clients; the possibility to find out the price of installation and repair of one or another car parts; making an appointment for a car repair.

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