

**BOT-MECHANIC**  
**NATURAL LANGUAGE GENERATION BASED CHAT-BOT**  
**ASSISTANCE FOR VEHICLE BREAKDOWNS**

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## **Abstract**

A Chat-Bot is a program backed with artificial intelligence that can simulate a conversation with a user, which ultimately simplifies the interaction between a human and a system. Many organizations that operate in different sectors have employed Chat-Bots mostly as an assistance tool with the capability of answering simple queries raised by users.

For this research, the author has selected the automotive industry to employ the proposed Chat-Bot. The author has identified that vehicle owners experience numerous problems related to vehicle breakdowns, and that this type of a system can support them in providing solutions to these problems.

Vehicle owners will experience various technical problems –which at times may require immediate solutions. Due to the high amount of vehicles, many garages, service points, fuel stations, etc. could be observed throughout the country at present. One could observe them in close proximity in and around urban areas, whereas the numbers are very low towards rural areas. Hence, a vehicle owner might have to spend more time in finding a suitable repair center in rural areas.

While analyzing different solutions that exist in the automotive sector, it is clear that most of the applications act as data repositories where a user raises a query and the system will check the data in the repository to provide the matched solution or multiple solutions as the output. These outputs are not verified and the user would have to check whether the response received through the application will resolve the problem or not.

To tackle the above problems, the author has developed an automated Chat-Bot solution that uses Natural Language Processing. Different testing methods such as; black box testing, accuracy testing and performance checkups have been used to test the developed solution.

The solution has the ability to provide accurate responses to the queries that are been raised by users with an accuracy of around 90%, and a response time less than 3 seconds. The solution has got positive feedback from industry experts and has proven to be an effective solution to overcome vehicle related problems

**Keywords – Chat-Bot, Natural Language Processing, Automotive, Roadside Side Assistance**