● **What is the research goal?**

● What question(s) is the author trying to answer?

● **What methods are being applied?**

● What methods is the author applying to answer the question?

● **What are the research results?**

● A paper can contain many different kinds of results (E.g.: applied results, theoretical

results

● **What claims are made in the paper?**

● For theoretical papers, what results are proven?

● **How are these claims supported?**

● **What reasonable claims and results are missing from the paper?**

● **What would be reasonable next steps for the research?**

**Research goals:**

Creating a chatbot that can act as a therapist to help in assessing mental health of users and converse with them based on their emotional state.

**Applied Methods:**

* Sentiment analysis was done using TextBlob library
* Preprocessing the text was done using neatText library
* Emotion classification was done using a trained Logistic regression model
* The chatbot was created using AIML library
* The user mental health assessment is using K10 scale

**Research Results:**

* Emotion classification model accuracy is 62%
* The chatbot performance was not evaluated using any metric

**Claims:**

* LR is more accurate

**Critics:**

1. The authors did not clarify how the text data was vectorized so that they can be used as input to logistic regression model
2. The authors did not prove that performing sentiment analysis improved the model’s accuracy, no comparisons were made between the performance with and without sentiment analysis
3. The emotions dataset was clearly unbalanced, yet this observation was not mentioned or handled in any way
4. They did not offer comparison with other chatbots performances.
5. There was no metric to evaluate the chatbot performance, they could have introduced the chatbot to different people and gathered their opinions about it since there is no standard to evaluate it other than human judgement.
6. I think they did not add a link to the dataset used in training or the dataset used to extract response from
7. Many advanced algorithms may produce better emotion classification

**Next Steps:**

1. Adding authentication to chatbot

**Our Next Steps:**

1. Error analysis to improve models accuracy
2. Use more advanced models

<https://www.devdungeon.com/content/ai-chat-bot-python-aiml>