



Chatbot

*- Your Virtual Conversational
Companion*

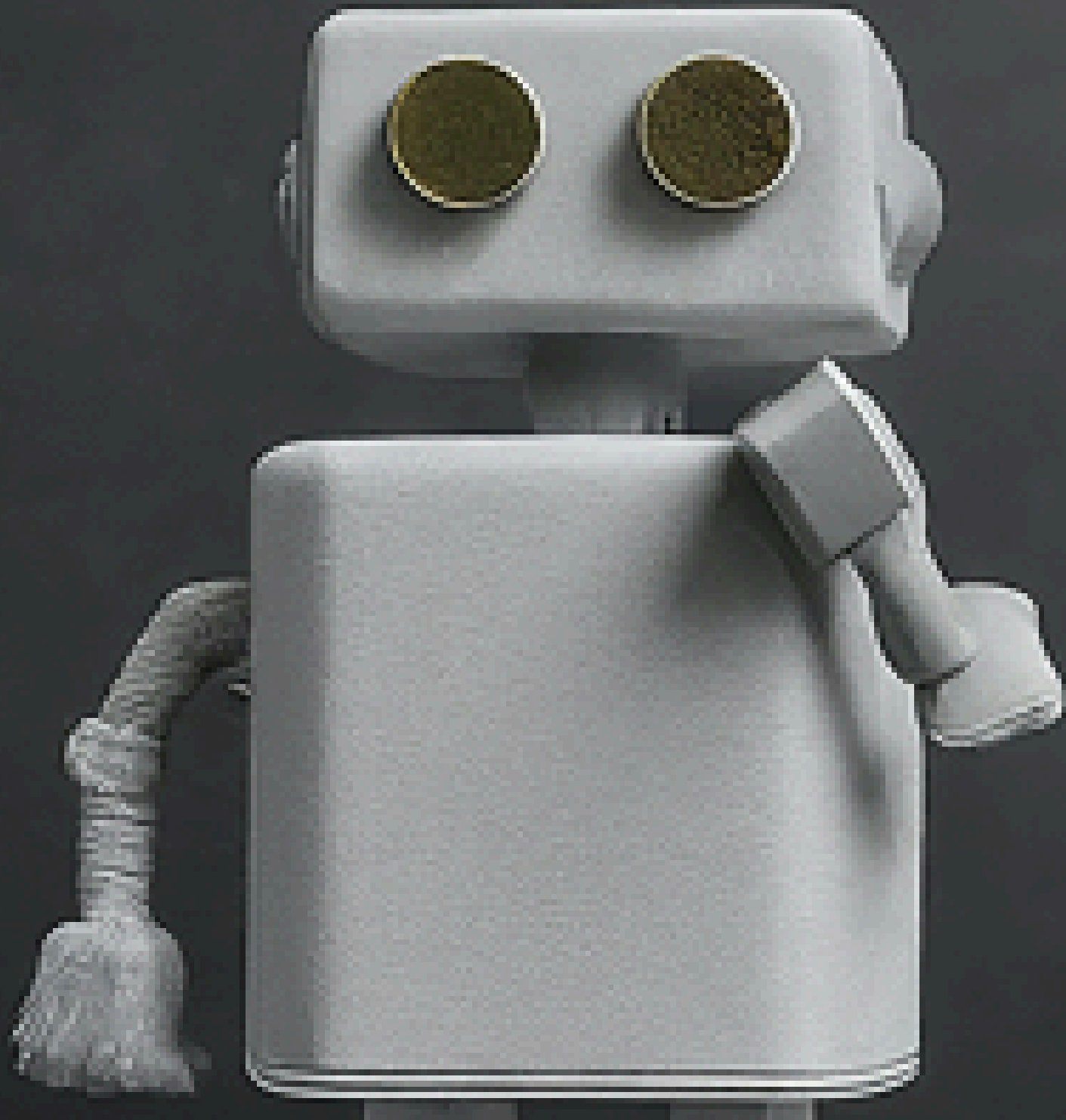
Agenda

- What is a Chatbot?
- Use cases
- Rule-based Chatbot
- Dataset
- Models, Libraries & Techniques
- Evaluation Metrics





What is a chatbot?



1. Gets input from the user
2. Process the input
3. Searches for relevant
answer from the database
4. Returns the response to
the user

Use cases

Customer
Support

HR and
Recruitment

Healthcare

Personal
Assistance

Education



E-commerce

Rule-based Chatbot

- Input Processing
- Pattern Matching
- Rule Evaluation
- Response Generation
- Context Management
- Fallback Mechanism



Dataset

Link: <https://www.kaggle.com/datasets/niraliivaghani/chatbot-dataset>

A JSON File consists of:

Tag

Patterns

Responses

Models, Libraries, & Techniques

Neural Network Model

Keras

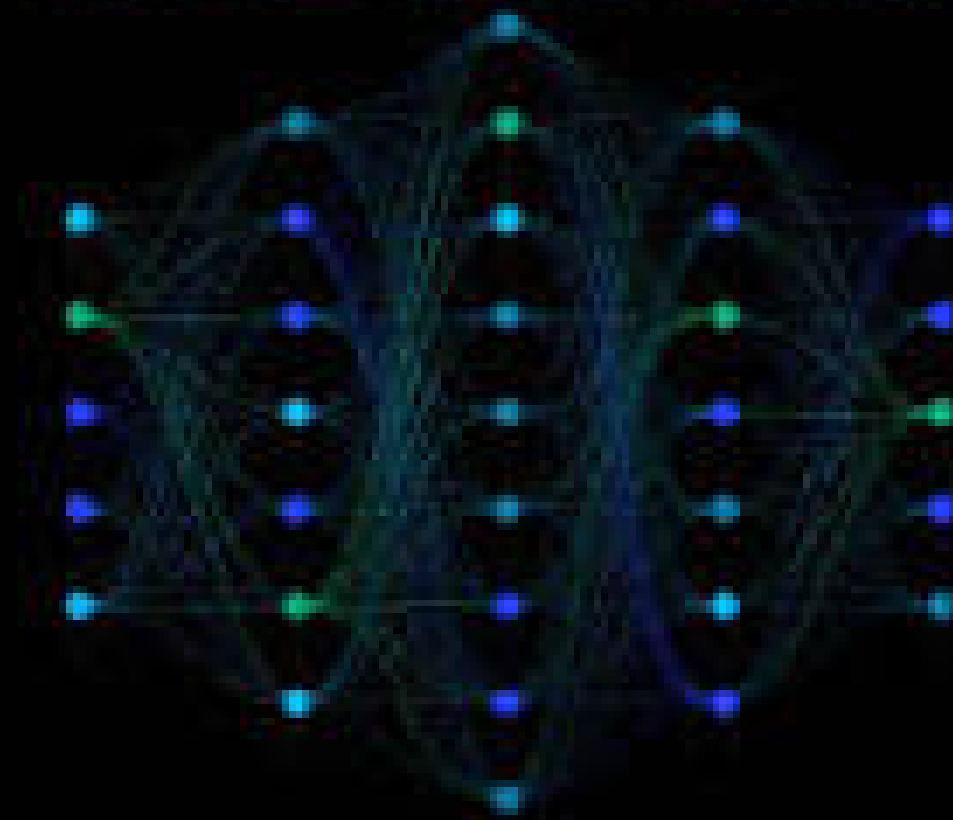
TensorFlow

Stochastic Gradient Descent

NLTK

Tokenization and Lemmatization

Artificial Neural Network



Evaluation Metrics

Accuracy: $(TP + TN) / (TP + FN + TN + FP) = 0.75$

Precision: $TP / (FP + TP) = 0.75$

Recall: $TP / (TP + FN) = 0.75$

F1 Score: $2 * Precision * Recall / (Precision + Recall) = 0.75$

Thank you!

Bylapudi Lahari
21BCE9969

