# Session 3: Chatbot Sentiment — Instructor Guide

This guide supports instructors delivering the Newegg AI Workshop – Session 3 (Chatbot Sentiment). It includes session flow, key concepts, teaching notes, and challenge solutions.

## Session Overview

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| Session Title | Session 3: Chatbot Sentiment |
| Duration | 90 minutes |
| Objective | Students learn how AI can understand emotions in text through sentiment analysis. They explore both rule-based and machine-learning approaches, and build a chatbot that responds based on user emotion. |
| Materials | Jupyter Notebook (Session\_3\_Chatbot\_Sentiment\_Beginner\_Final.ipynb), Internet access, GPU-enabled environment (e.g., NiceGPU), PPT slides. |

## Teaching Flow

* 1. Introduction (10 min): Discuss AI communication and how chatbots understand human emotion.
* 2. Rule-Based Demo (15 min): Show simple keyword-based sentiment detection.
* 3. Transformer Demo (20 min): Demonstrate Hugging Face’s pre-trained sentiment analysis pipeline.
* 4. Chatbot Creation (25 min): Guide students to make their chatbot respond to positive, negative, or neutral text.
* 5. Challenge Activity (15 min): Students extend chatbot features, test their own sentences, and personalize responses.
* 6. Wrap-Up & Reflection (5 min): Discuss real-world applications (AI assistants, customer feedback tools, social media sentiment).

## Key Concepts

• Sentiment analysis: determining whether text expresses positive, negative, or neutral emotion.

• Rule-based systems: simple keyword matching for fast but limited detection.

• Transformer models: pre-trained AI systems that generalize emotion understanding.

• Chatbots: programs that simulate conversation using text and logic.

• Confidence scores: measure of how sure the AI is about its prediction.

• Hybrid systems: combining rule-based and AI models for reliability.

## Instructor Notes

⚙️ Emphasize accessibility: Show that both simple and advanced methods can achieve useful results.

💡 Encourage creativity: Let students modify chatbot messages and personality.

🧠 Simplify Transformer concepts: Compare it to a student who has already read millions of conversations.

🌍 Connect to real-world tools: Link to Siri, Alexa, and customer sentiment systems.

⚠️ Be prepared for model download delays; consider pre-downloading the model on workshop devices.

## Challenge Questions (Student Version)

1. 💡 Customize the chatbot’s replies for each emotion type.

2. 🔄 Test your own sentences and see how the chatbot reacts.

3. 🧠 Add a neutral-tone response to the chatbot.

4. 🎨 Bonus: Add emojis or ASCII art to enhance the chatbot’s personality.

## Challenge Solutions (Instructor Reference)

1. 💡 Students can modify chatbot messages (e.g., positive → 'That’s awesome! 😄').

2. 🔄 Encourage experimentation with emotional or sarcastic sentences to discuss limitations.

3. 🧠 Add an elif condition for 'neutral' sentiment to reply calmly (e.g., 'I see, sounds okay.').

4. 🎨 Add creative emoji-based replies; discuss tone and empathy in chatbot design.

## Wrap-Up & Reflection

🎯 Reinforce that AI doesn’t truly feel emotions — it recognizes patterns that resemble human expression. Encourage students to think about ethical AI design and how emotional intelligence affects user experience.

🎉 Fun closing idea: Ask each student to 'teach' the chatbot one new emotional response and share the funniest one with the class!