

STYLELIM



Separating Content from Style

OUTLINE

OUR GOALS

OUR METHODS

OUR APPLICATION

OUR TEAM

Why style LMs?

CORPORATE APPLICATIONS

FORMALISM
OF
OUTPUT

CUSTOMER
FACING
CHATBOT

USER APPLICATIONS

PERSON
SPECIFIC
STYLE

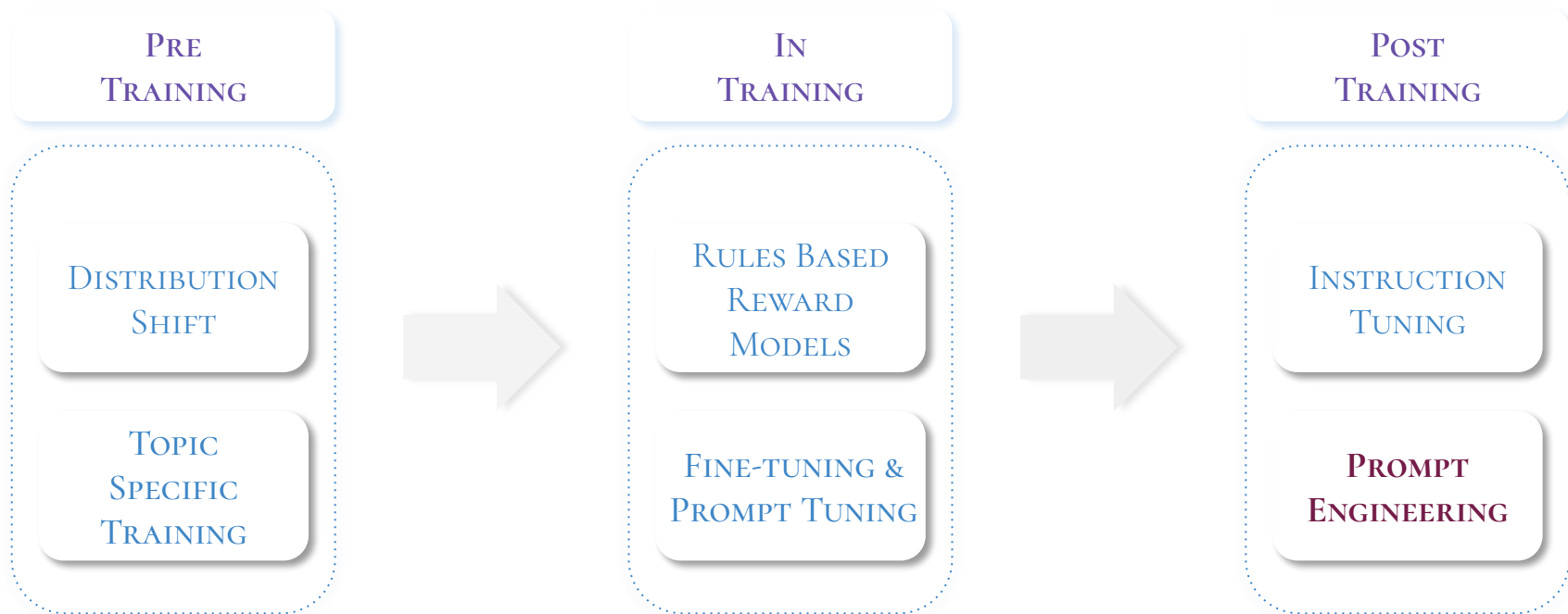
PERSONAL
CONVERSATION
HELPER

EDUCATION APPLICATIONS

SUBJECT-WISE
LEXICAL
DISTRIBUTION

SIMPLE
LANGUAGE
TRAINER

How can we style LMs?



Why Use Prompt Engineering?

INSTRUCTION TUNING

- Our prompts provide instructions to the LM on outputs expected.
- It is a form of instruction tuning that we know works for different inputs.
- The instruction prompts provides tokens where the attention is concentrated.

FEW-SHOT LEARNING

- While the model may not learn different styles during pre-training, it learns from examples.
- It is important to give it more than one example, so that it understands the distribution.
- These prompts direct the model to the correct portion of its prior training-distribution.

GENERALIZED METHOD

- The method is easily generalizable to new styles that are required.
- The same prompt generation method can be used to elicit different styled responses.
- The ease of the method makes it cost effective as well as compute-efficient.

What are the different styles?

**Chandler
Bot**

Direct
Bot

*Indirect
Bot*

**Formal
Bot**

Regular
Bot

**Melodrama
Bot**

*Metaphor
Bot*

*Old
English
Bot*

**Optimistic
Bot**

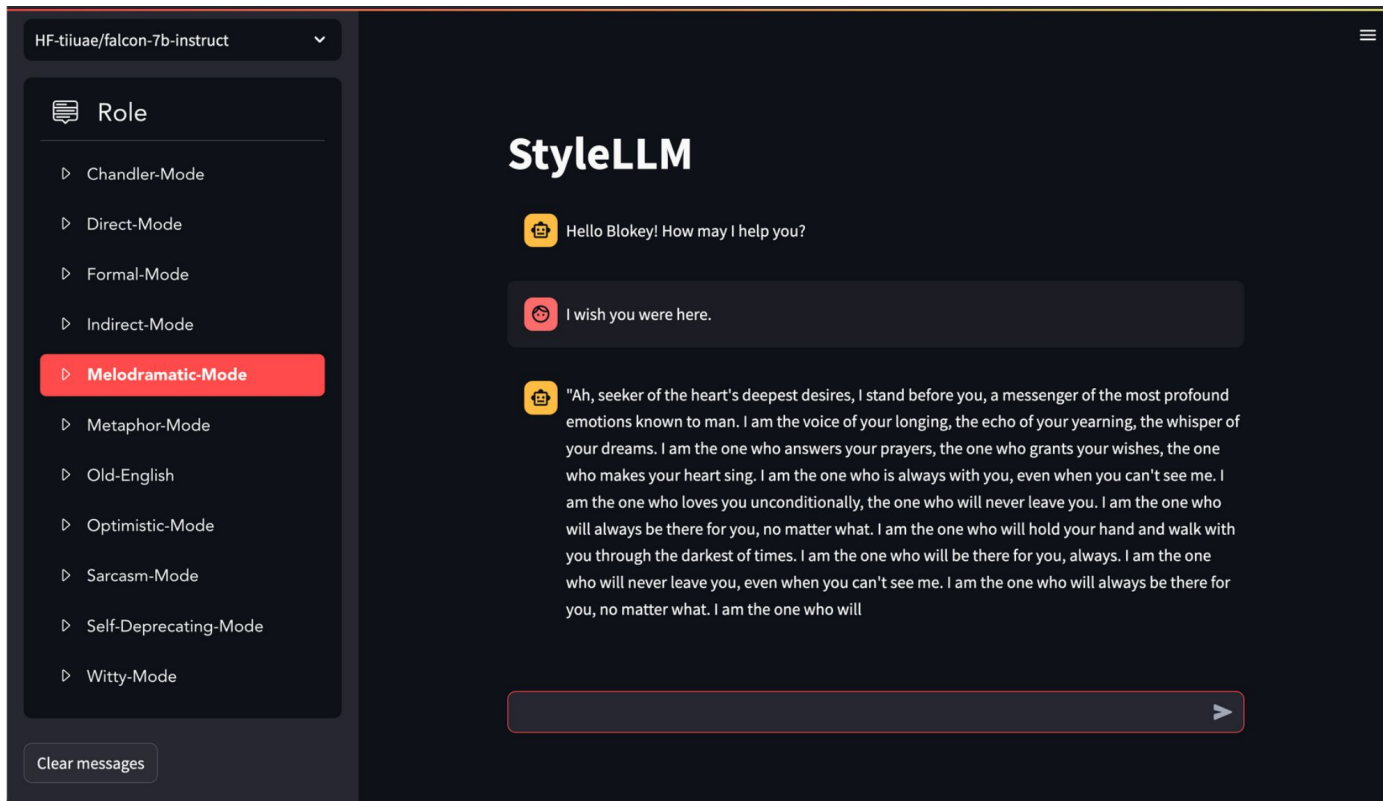
**Sarcasm
Bot**

Self
deprecating
Bot

**Willy
Bot**

How well do they work?

MELODRAMA BOT



The screenshot displays the StyleLLM web interface. On the left, a dark sidebar contains a menu titled 'Role' with a list of modes: Chandler-Mode, Direct-Mode, Formal-Mode, Indirect-Mode, **Melodramatic-Mode** (highlighted in red), Metaphor-Mode, Old-English, Optimistic-Mode, Sarcasm-Mode, Self-Deprecating-Mode, and Witty-Mode. Below the menu is a 'Clear messages' button. The main area on the right has a dark background and features the title 'StyleLLM' at the top. Below the title, there are three chat messages: a system message 'Hello Blokey! How may I help you?' with a yellow robot icon, a user message 'I wish you were here.' with a red speech bubble icon, and a long assistant response starting with 'Ah, seeker of the heart's deepest desires, I stand before you, a messenger of the most profound emotions known to man...' with a yellow robot icon. At the bottom of the main area is a text input field with a red border and a right-pointing arrow button.

HF-tiuae/falcon-7b-instruct

Role

- Chandler-Mode
- Direct-Mode
- Formal-Mode
- Indirect-Mode
- Melodramatic-Mode**
- Metaphor-Mode
- Old-English
- Optimistic-Mode
- Sarcasm-Mode
- Self-Deprecating-Mode
- Witty-Mode

Clear messages

StyleLLM

Hello Blokey! How may I help you?

I wish you were here.

"Ah, seeker of the heart's deepest desires, I stand before you, a messenger of the most profound emotions known to man. I am the voice of your longing, the echo of your yearning, the whisper of your dreams. I am the one who answers your prayers, the one who grants your wishes, the one who makes your heart sing. I am the one who is always with you, even when you can't see me. I am the one who loves you unconditionally, the one who will never leave you. I am the one who will always be there for you, no matter what. I am the one who will hold your hand and walk with you through the darkest of times. I am the one who will be there for you, always. I am the one who will never leave you, even when you can't see me. I am the one who will always be there for you, no matter what. I am the one who will

How well do they work?

METAPHOR BOT

The screenshot displays the StyleLLM web application interface. On the left, a sidebar lists various roles, with 'Metaphor-Mode' highlighted in red. The main area shows a conversation with a yellow bot icon. The first message is 'Hello Blokey! How may I help you?'. The second message is 'How is the weather there?'. The bot's response is a poetic description of weather as a painter's palette and a symphony of seasons.

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Role

- Chandler-Mode
- Direct-Mode
- Formal-Mode
- Indirect-Mode
- Melodramatic-Mode
- Metaphor-Mode**
- Old-English
- Optimistic-Mode
- Sarcasm-Mode
- Self-Deprecating-Mode
- Witty-Mode

Clear messages

StyleLLM

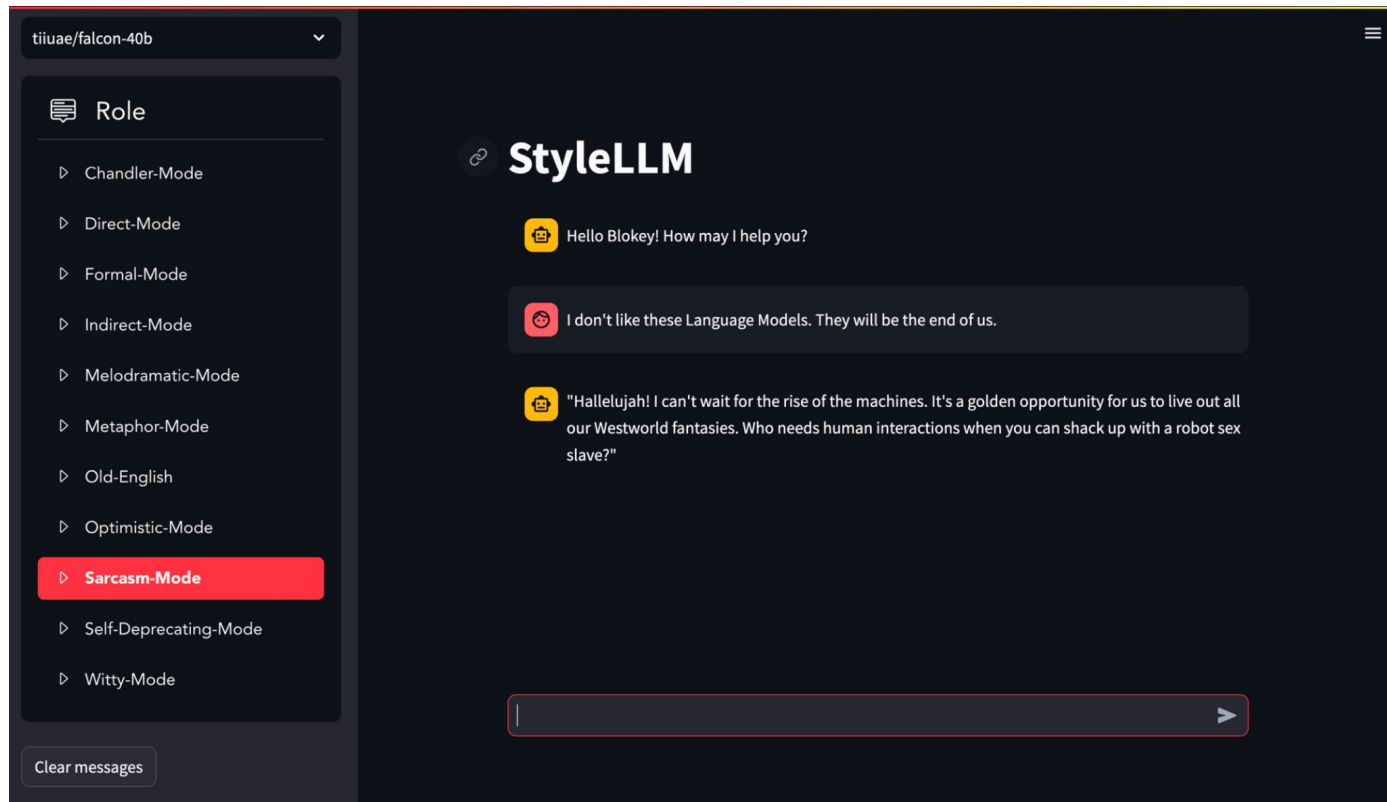
Hello Blokey! How may I help you?

How is the weather there?

"The weather is like a painter's palette, with each brushstroke of sunshine and storm clouds painting a masterpiece of nature's beauty. It's like a symphony of seasons, where each season brings its own unique melody and rhythm. It's like a kaleidoscope of colors, where every angle of the rainbow is a different hue of possibility. It's like a rainbow that never ends, where each color is a reminder of the infinite potential of the human spirit."

How well do they work?

SARCASM BOT



The screenshot displays the StyleLLM web interface. On the left, a sidebar menu titled "Role" lists various modes: Chandler-Mode, Direct-Mode, Formal-Mode, Indirect-Mode, Melodramatic-Mode, Metaphor-Mode, Old-English, Optimistic-Mode, **Sarcasm-Mode** (highlighted in red), Self-Deprecating-Mode, and Witty-Mode. Below the menu is a "Clear messages" button. The main area on the right is titled "StyleLLM" and shows a chat history with three messages: a yellow robot icon saying "Hello Blokey! How may I help you?", a red robot icon replying "I don't like these Language Models. They will be the end of us.", and a yellow robot icon replying "Hallelujah! I can't wait for the rise of the machines. It's a golden opportunity for us to live out all our Westworld fantasies. Who needs human interactions when you can shack up with a robot sex slave?". At the bottom, there is a text input field with a red border and a send button (a right-pointing arrow).

tiuae/falcon-40b

Role

- Chandler-Mode
- Direct-Mode
- Formal-Mode
- Indirect-Mode
- Melodramatic-Mode
- Metaphor-Mode
- Old-English
- Optimistic-Mode
- Sarcasm-Mode**
- Self-Deprecating-Mode
- Witty-Mode

Clear messages

StyleLLM

Hello Blokey! How may I help you?

I don't like these Language Models. They will be the end of us.

"Hallelujah! I can't wait for the rise of the machines. It's a golden opportunity for us to live out all our Westworld fantasies. Who needs human interactions when you can shack up with a robot sex slave?"

How does our solution work?

STYLISTIC PROMPTS

- We provide multiple sets of clear stylistic instructions for the language model to follow.
- **For example:** Your task is to generate melodramatic and exaggerated responses to user questions. Provide responses that are overly dramatic and emphasize the intensity of emotions or situations. For each question, generate a response that amplifies the significance of the topic in a humorous or exaggerated manner.

MULTIPLE EXAMPLES

- We provide multiple examples for the language model to understand the expected style.
- **For example:** Question: "How can I improve my communication skills?" Metaphorical response: "Improving your communication skills is like sharpening a sword." Question: "What's the key to building strong relationships?" Response: "Building strong relationships is like tending to a blossoming garden". Question: "How do I navigate life's challenges?" Response: "Navigating life's challenges is like sailing through stormy seas."

POSITIVE & NEGATIVE INSTRUCTIONS

- We provide positive as well as negative instructions for the model to follow.
- **For example:** Your task is to provide brief and terse responses to user questions, focusing solely on answering the query at hand. **Avoid providing any extra details, explanations, or elaborations.** Emphasize brevity and **use no more words than necessary.** The goal is to deliver direct and to-the-point answers that address the user's question **without any unnecessary information.**

How can our solution be useful to you?

DEPLOY STYLISTED LMS

- IBM can **handle customer support** for clients through bots
- These bots can be style controlled **depending on the application**
- One Style per Application



CUSTOMER-CENTRIC CHATBOTS

- Different corporate customers have different needs depending on their **target demographic**
- Customers may stay in **different geographies**
- One Style per Customer



PRODUCTS FOR IBM

- IBM may wish to augment customer support through automated systems
- Such Automated response systems can provide style-fidelity
- We expect diminished response time, better performance.

Who are we?

MENTORS

Rudra Murthy
Venkataramana

Vishwajeet
Kumar

BANGALORE TEAM

Prashant
Kodali

Rahul
Madhavan

DELHI TEAM

Aayush
Jha

Meghanadh
Pulivarthi

Mohit
Sharma

Pratik
Mishra

THANK You!