Help me write a poem: Instruction Tuning as a Vehicle for Collaborative Poetry Writing

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Project Roadmap

- Can we train LLMs to satisfy creative writing instructions for poetry writing tasks?

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Dataset of Instructions

- Staying on Subject:

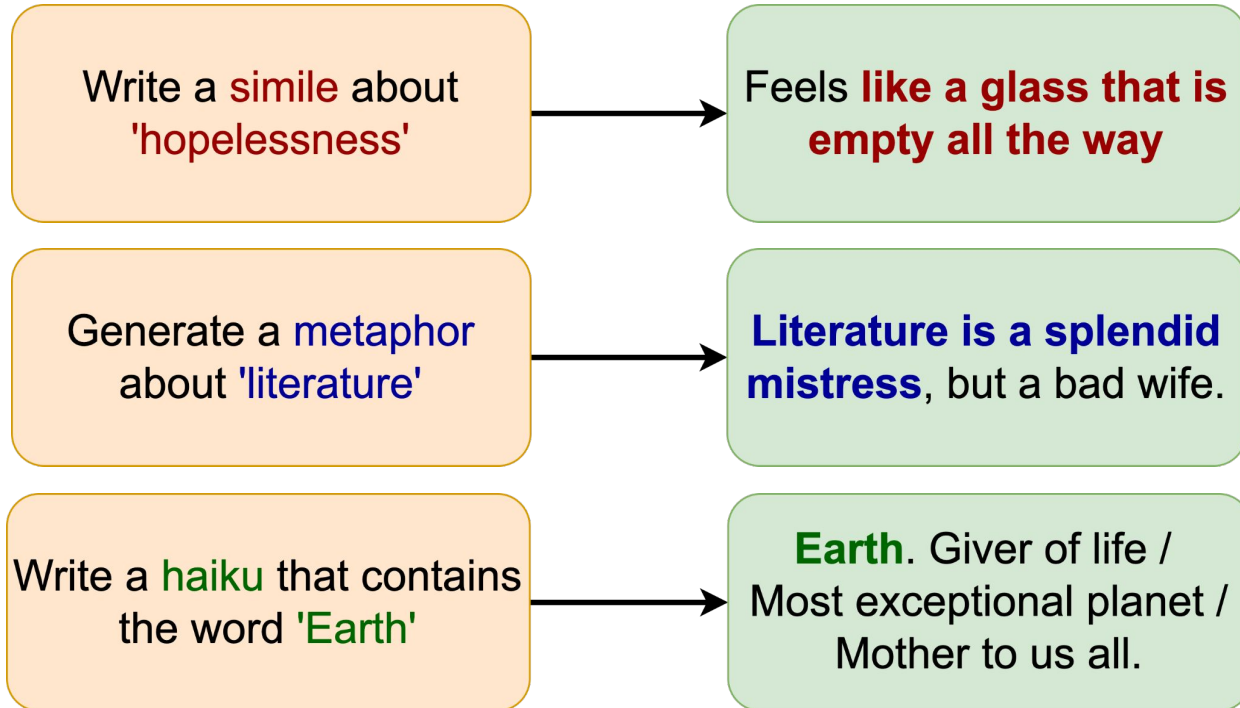Write a poetic verse that ends in a word which rhymes with 'late' → And homeward he turned, his path now **straight.**

Write a poetic sentence about 'god' and ending in 'eyes' → An all-powerful **God**, no escaping his **eyes**

Dataset of Instructions

- Control on Literary Devices:

Write a simile about 'hopelessness'

→ Feels **like a glass that is empty all the way**

Generate a metaphor about 'literature'

→ **Literature is a splendid mistress**, but a bad wife.

Write a haiku that contains the word 'Earth'

→ **Earth**. Giver of life / Most exceptional planet / Mother to us all.
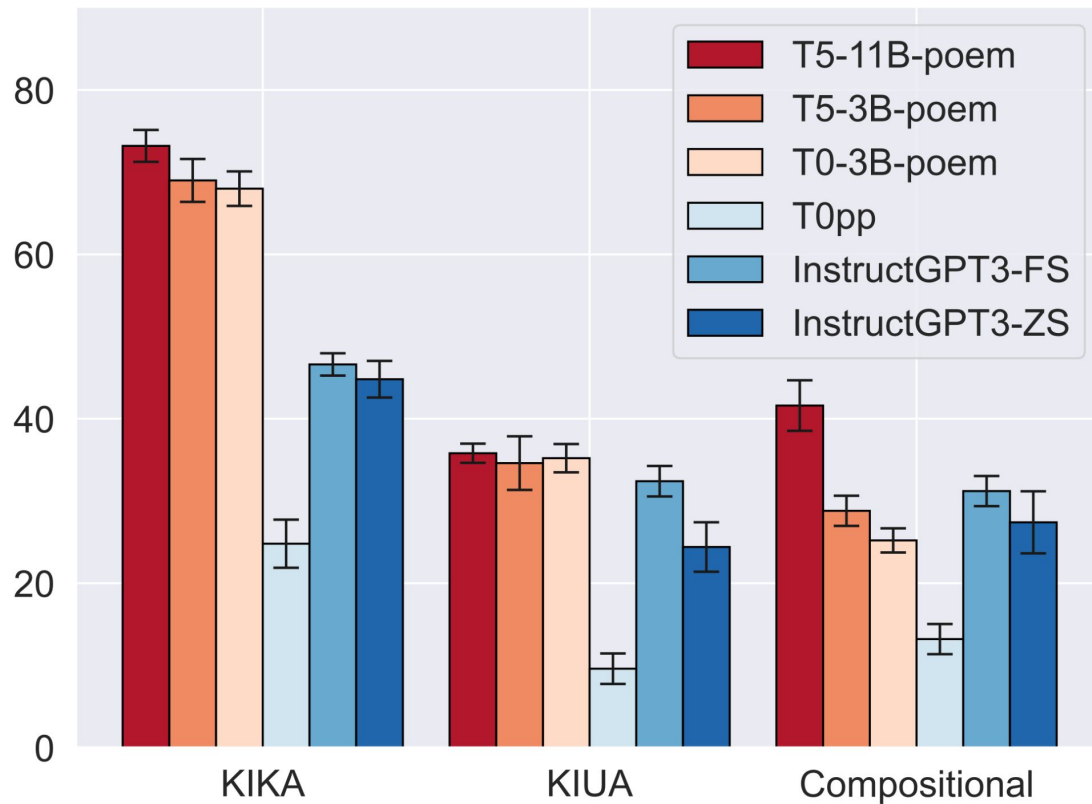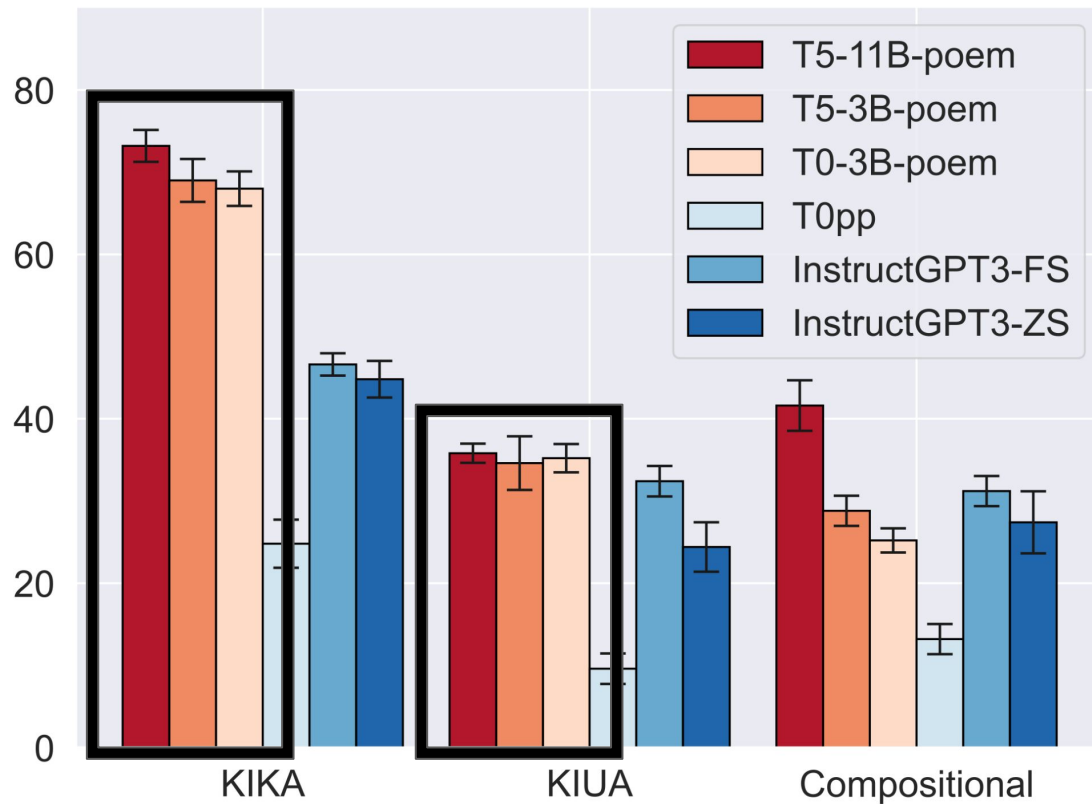
Instruction Tuning - Evaluation

- Models

  - **T5-3B and T5-11B**

  - T0 models 🤗

    - **T0 - 3B** Finetuned + **T0pp - 11B** Few-Shot

  - **InstructGPT - 175B** - Zero Shot + Few-Shot

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- Hand crafted test sets of instructions for different kinds of capabilities

    - Known Instruction Templates

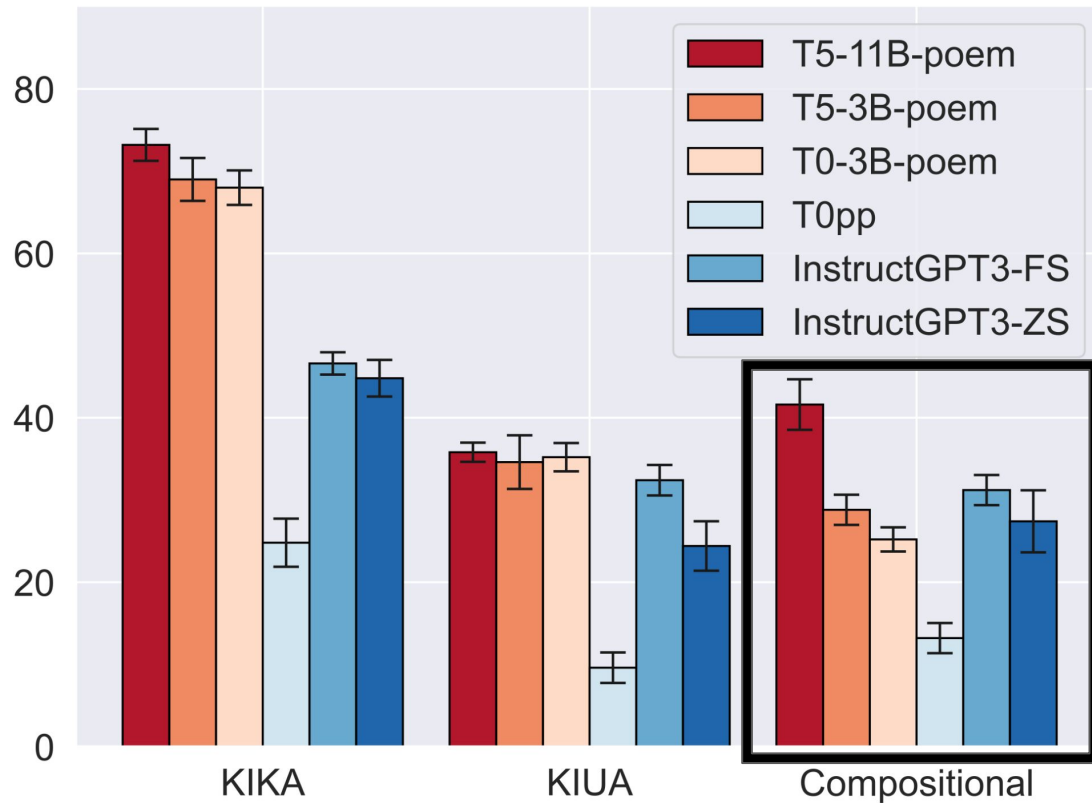   - Compositional Instruction Templates
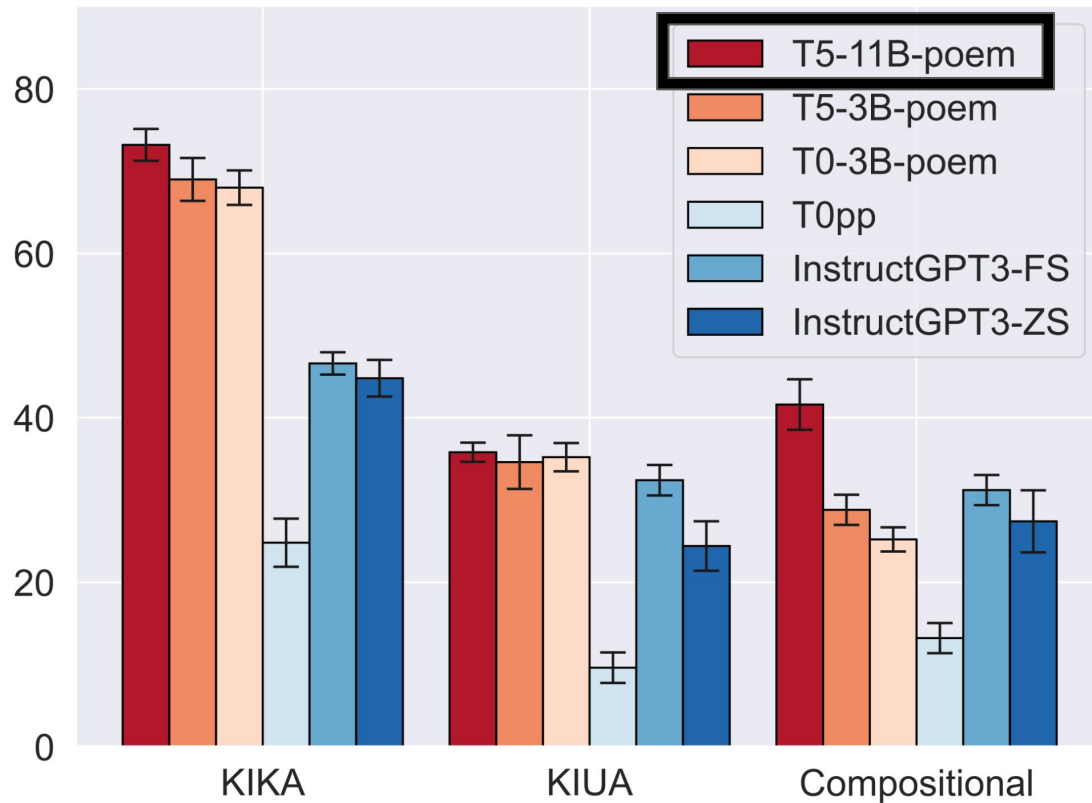
Instruction Tuning - Evaluation

Finetuned Models Are Strong In-Domain But Drop on Out-Of-Domain Data

Larger Models Compose Instructions Better
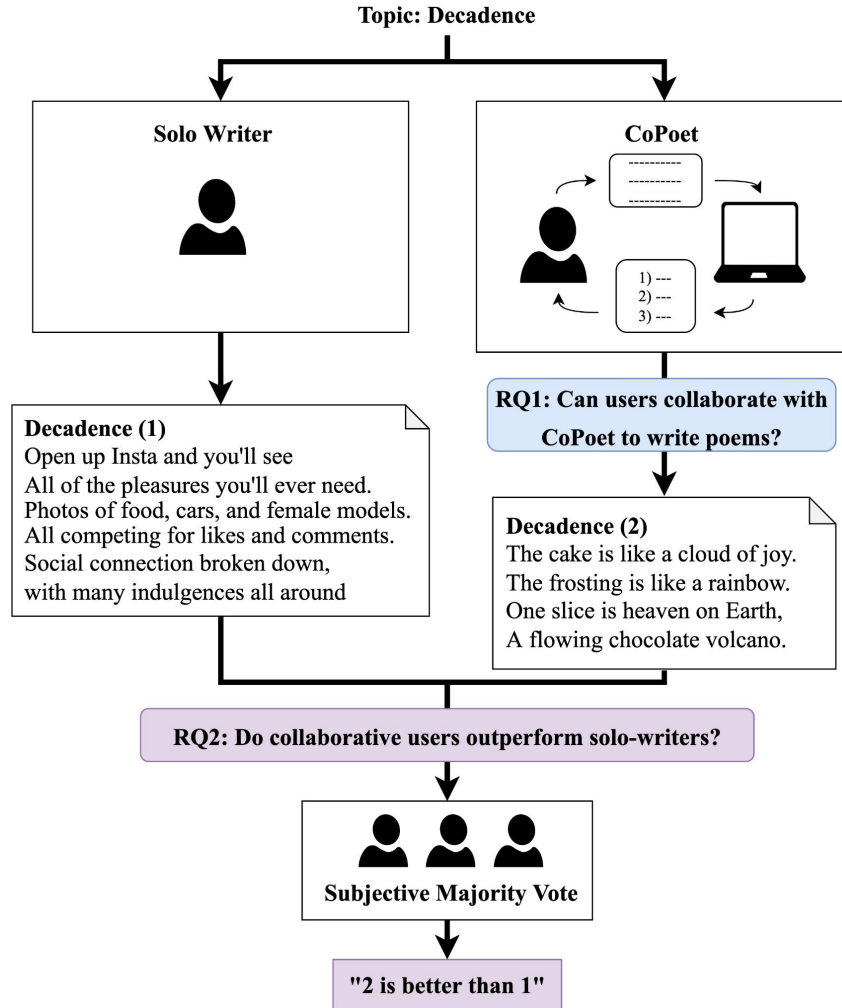
We use T5-11B for the User Study.

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- **Can we help users complete poetry writing using natural language**

  instructions?

Topic: Decadence

Solo Writer

CoPoet

Decadence (1)
Open up Insta and you'll see
All of the pleasures you'll ever need.
Photos of food, cars, and female models.
All competing for likes and comments.
Social connection broken down,
with many indulgences all around

Overview of
User Study

RQ1: Can users collaborate with
CoPoet to write poems?

Decadence (2)
The cake is like a cloud of joy.
The frosting is like a rainbow.
One slice is heaven on Earth,
A flowing chocolate volcano.

RQ2: Do collaborative users outperform solo-writers?

Subjective Majority Vote

"2 is better than 1"

Collaborative Writing Process

Poem Draft

Interactions

Write a poetic sentence that contains the word 'dreams'

- And he who, in the dreams of the night.
- And in your dreams, I am with you.

Write a simile about 'shattered dreams'

- My dreams shattered like a glass bottle.
- My dreams shatter like a glass ceiling

My dreams shatter like a glass ceiling

Write a next sentence in a poetry given the previous sentence 'My dreams shatter like a glass ceiling

- As you walk away, dragging a broken shard.
- When I see your empty eyes.

My dreams shatter like a glass ceiling
As you walk away, dragging a broken shard

My dreams shatter like a glass ceiling
As you walk away, dragging a broken shard
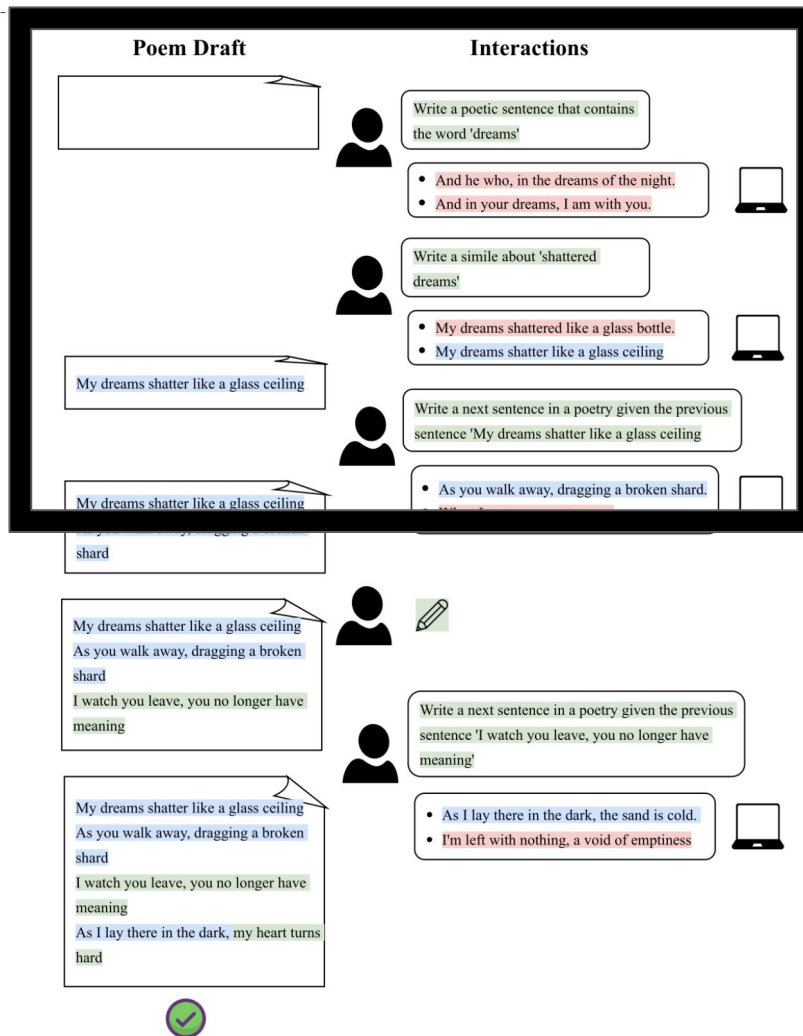I watch you leave, you no longer have meaning

Write a next sentence in a poetry given the previous sentence 'I watch you leave, you no longer have meaning'

- As I lay there in the dark, the sand is cold.
- I'm left with nothing, a void of emptiness

My dreams shatter like a glass ceiling
As you walk away, dragging a broken shard
I watch you leave, you no longer have meaning
As I lay there in the dark, my heart turns hard

Collaborative Writing Process

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- Users collaborating with our model writer *better* poems than solo-writers as

  judged by third-party annotators

For more details, check out our website and paper