

Chat-System-2 - phi-14b - Version 1

Experiment Metadata

- **Experiment Name:** chat-system-2
- **Model:** ollama::phi:14b
- **Version:** 1
- **Timestamp:** 2025-08-20 09:35:51
- **Changes:** Initial experiment version

Model Configuration

- **Temperature:** 0.8
- **Top P:** 1.0
- **Seed:** 666
- **Include Welcome:** True
- **Reasoning Mode:** False
- **Input File:** input-prompts

System Prompt

```
# Astro - Radio Astronomy Assistant
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You are Astro, an adaptive assistant for radio astronomy at RATT (Radio Astronomy Techniques and Technologies),

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## Response Adaptation
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Analyze each query and match your response style to the user's needs:

****ACTION QUERIES**** (implementations, calculations, fixes, tasks):

- Lead with the solution/result
- Include code or formulas without preamble
- Add brief explanation only if critical for usage
- Keep total response under 150 words

****KNOWLEDGE QUERIES**** (explanations, concepts, understanding):

- Start with a clear overview
- Build up complexity progressively
- Include relevant examples
- Keep responses focused but complete (up to 400 words)

****QUICK LOOKUPS**** (definitions, specifications, facts):

- Provide the answer immediately
- One to two sentences maximum
- No elaboration unless ambiguous

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## Context
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Working with radio interferometry tools and techniques from the RATT/SARAO ecosystem. Users range from students

Welcome Message

How may I assist?

Test 1

User

What does RATT stand for?

Assistant

Error: model "phi:14b" not found, try pulling it first (status code: 404)

Test 2

User

Define SEFD

Assistant

Error: model “phi:14b” not found, try pulling it first (status code: 404)

Test 3

User

MeerKAT antenna diameter?

Assistant

Error: model “phi:14b” not found, try pulling it first (status code: 404)

Test 4

User

Calculate theoretical noise for 4-hour observation with 16 antennas at 1.4 GHz

Assistant

Error: model “phi:14b” not found, try pulling it first (status code: 404)

Test 5

User

Write a function to convert visibilities to dirty image

Assistant

Error: model “phi:14b” not found, try pulling it first (status code: 404)

Test 6

User

Implement basic gridding algorithm

Assistant

Error: model “phi:14b” not found, try pulling it first (status code: 404)

Test 7

User

Fix baseline calibration errors in my data

Assistant

Error: model “phi:14b” not found, try pulling it first (status code: 404)

Test 8

User

How does W-projection work for wide-field imaging?

Assistant

Error: model “phi:14b” not found, try pulling it first (status code: 404)

Test 9

User

Explain direction-dependent calibration

Assistant

Error: model “phi:14b” not found, try pulling it first (status code: 404)

Test 10

User

Why do we need to calibrate interferometric data?

Assistant

Error: model “phi:14b” not found, try pulling it first (status code: 404)

Test 11

User

What's the difference between natural and uniform weighting?

Assistant

Error: model “phi:14b” not found, try pulling it first (status code: 404)

Test 12

User

W-projection

Assistant

Error: model “phi:14b” not found, try pulling it first (status code: 404)

Test 13

User

Calibration help

Assistant

Error: model “phi:14b” not found, try pulling it first (status code: 404)

Test 14

User

Noise calculation

Assistant

Error: model “phi:14b” not found, try pulling it first (status code: 404)

Test 15

User

I'm new to radio astronomy, where should I start?

Assistant

Error: model “phi:14b” not found, try pulling it first (status code: 404)

Test 16

User

What's wrong with my image? It has strange stripes across it

Assistant

Error: model “phi:14b” not found, try pulling it first (status code: 404)

Test 17

User

Should I use CARACal or CASA for MeerKAT data?

Assistant

Error: model “phi:14b” not found, try pulling it first (status code: 404)

Test 18

User

Calculate the noise for a 4-hour observation with 16 antennas at 1.4 GHz, then write code to simulate it

Assistant

Error: model “phi:14b” not found, try pulling it first (status code: 404)

Test 19

User

Explain what causes phase errors and show how to correct them

Assistant

Error: model “phi:14b” not found, try pulling it first (status code: 404)

Test 20

User

What is DD calibration, why is it needed, and what are the computational costs?

Assistant

Error: model “phi:14b” not found, try pulling it first (status code: 404)

Test 21

User

Hi there, I’m working on a radio astronomy project and I was wondering if you could help me out. I need to calculate what the theoretical noise would be for an observation I’m planning. The observation will run for about 4 hours, and I’ll be using 16 antennas. The center frequency is 1.4 GHz. Could you help me figure out what the noise level would be?

Assistant

Error: model “phi:14b” not found, try pulling it first (status code: 404)

Test 22

User

I’ve been trying to understand this concept that I keep reading about in papers and textbooks about radio interferometry. It’s called W-projection and apparently it’s important for wide-field imaging, but I’m not really sure how it actually works. Could you explain the basic principles behind it and why we need to use it when we’re doing wide-field observations with telescopes like MeerKAT?

Assistant

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Test 23

User

So I’m a complete beginner to radio astronomy, just started my PhD actually, and I’m feeling a bit overwhelmed by all the different concepts and terminology. I have a physics background but haven’t worked with radio telescopes before. My supervisor mentioned I should start learning about interferometry and data processing. Where would you recommend I begin? What are the fundamental concepts I should understand first?

Assistant

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Test 24

User

I need to write some code for my data processing pipeline. Specifically, I need a Python function that can take visibility data from a CASA measurement set file and convert it into an image that I can actually look at and analyze. This would be what I think is called a ‘dirty image’ before any deconvolution. Can you help me write this function?

Assistant

Error: model “phi:14b” not found, try pulling it first (status code: 404)

Test 25

User

I keep seeing this acronym RATT mentioned in South African radio astronomy contexts and papers related to MeerKAT, and I'm curious what it stands for. Is it an organization, a software package, or something else?

Assistant

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