

This notebook is optimized for Google Colab. I prefer if you upload it to colab and run it.

However, to run this locally, be sure you:

- have python running locally, update the library install format from `!` to `%` so for example `!pip install foo` becomes `%pip install foo`
- store secrets as env variables in your local system using `os.environ.get("SECRET_NAME")` vs what I've currently implemented

> Libraries

[] ↳ 6 cells hidden

✓ RAGAS Metrics Calculation

> Metrics calcs for retrieved context recall and precision

Show code

	Evaluating: 100%	51/51 [00:05<00:00, 9.90it/s]
	Evaluating: 100%	51/51 [00:07<00:00, 7.48it/s]

✓ Visualize the outputs

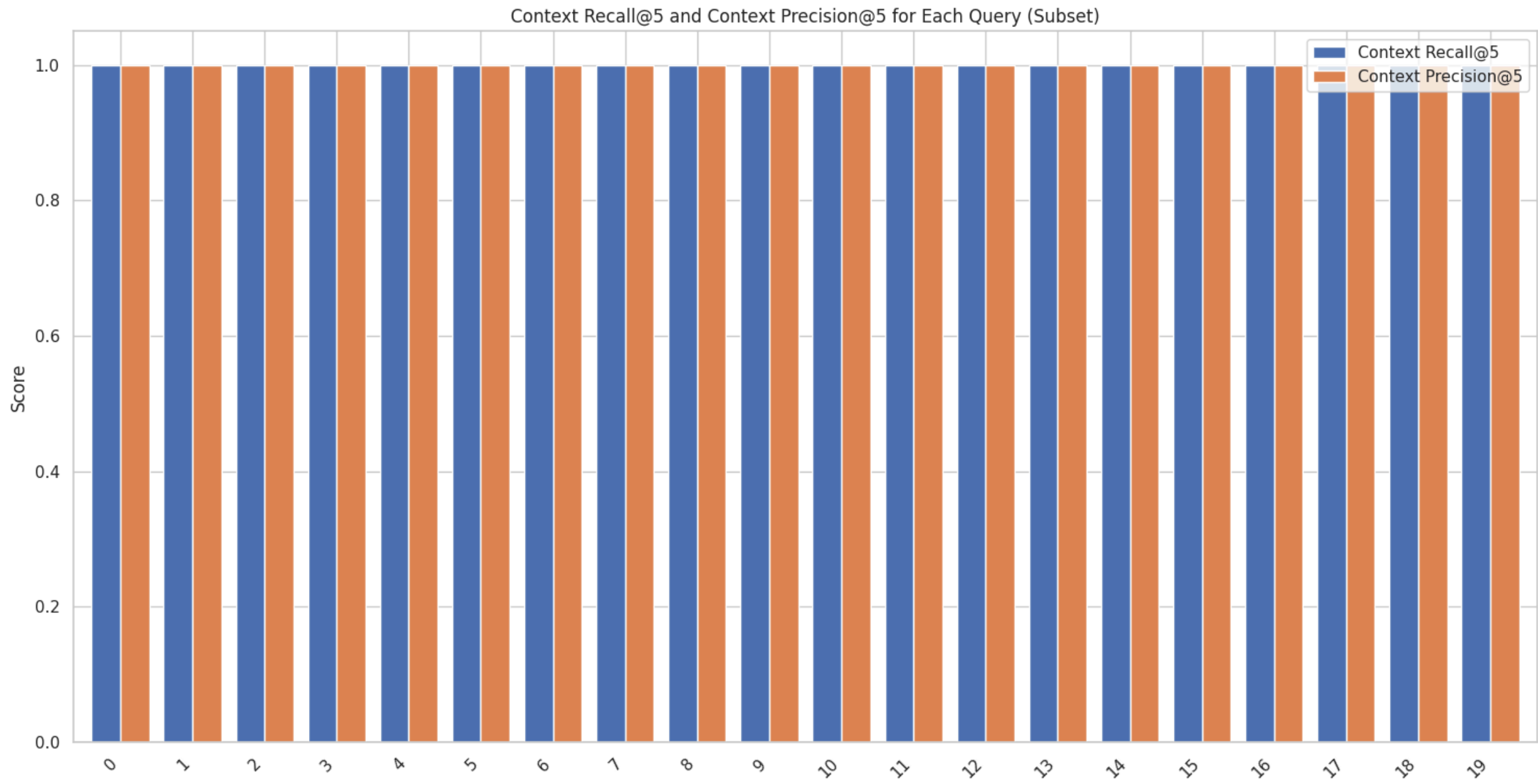
> Precision & Recall Visualizations

Show code



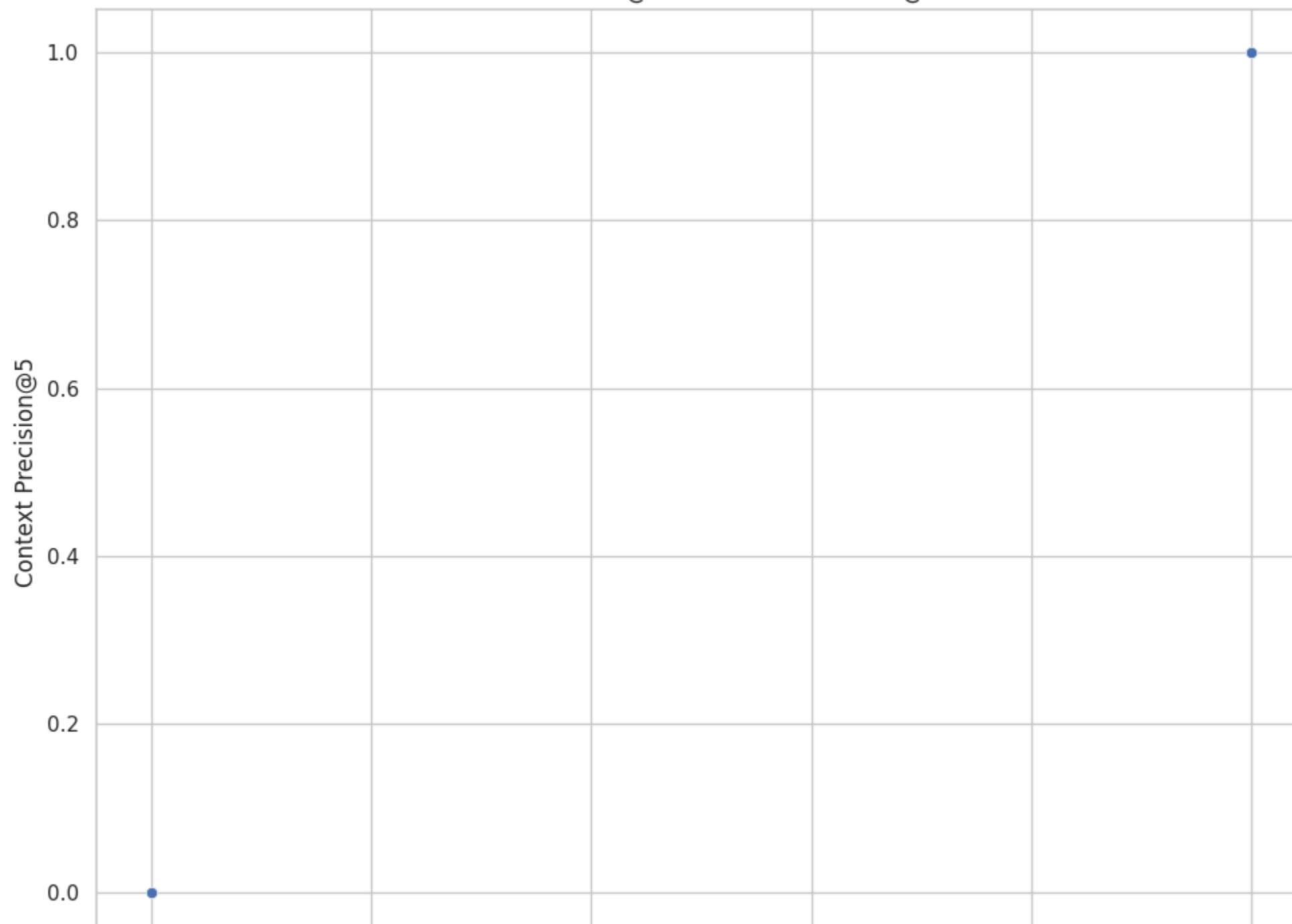
	count	mean	std	min	25%	50%	75%	max	
context_recall	51.0	0.960784	0.196039	0.0	1.0	1.0	1.0	1.0	
context_precision	51.0	0.960784	0.196039	0.0	1.0	1.0	1.0	1.0	

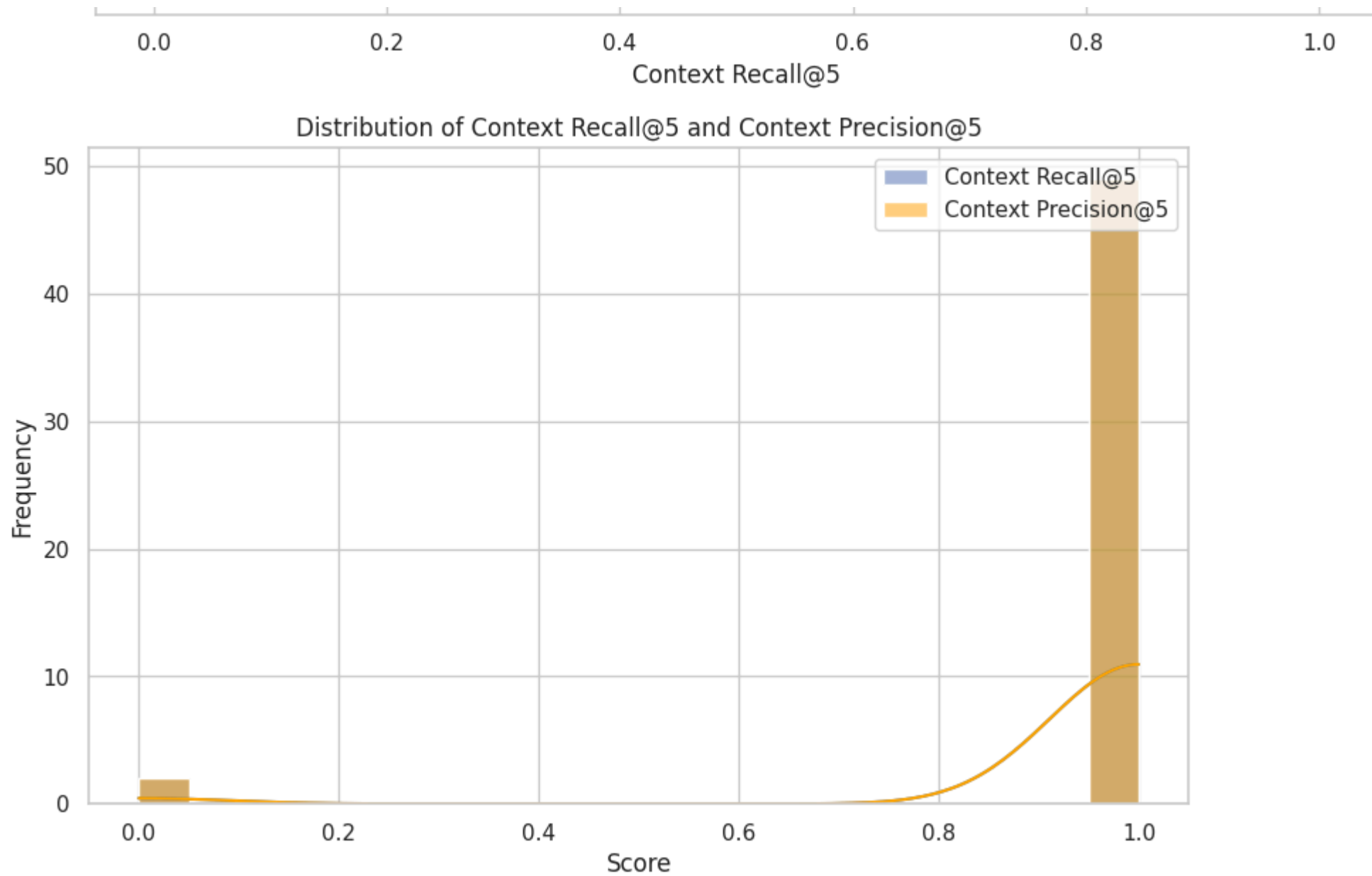
<Figure size 1500x800 with 0 Axes>



Query Index


Context Recall@5 vs. Context Precision@5





> Summarizing Our RAGAS Results



Show code



Average Context Recall@5: 0.96

Average Context Precision@5: 0.96

Queries with low precision:

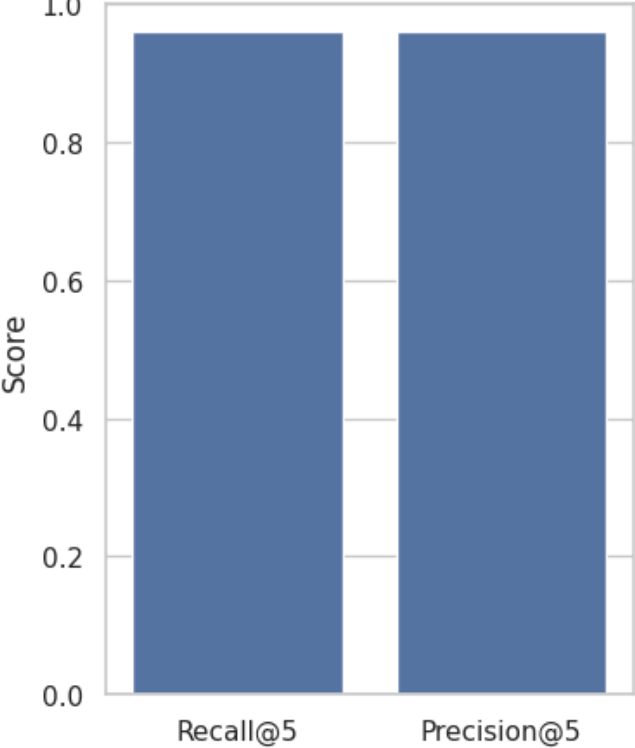
	question	answer	context_precision	
38	How are mango leaves used in Central American ...	In Central American customs and rituals, mango...	0.0	
46	How are mango leaves used in the cultural trad...	In the cultural traditions of Southeast Asian ...	0.0	

> Visualizing Our RAGAS Results

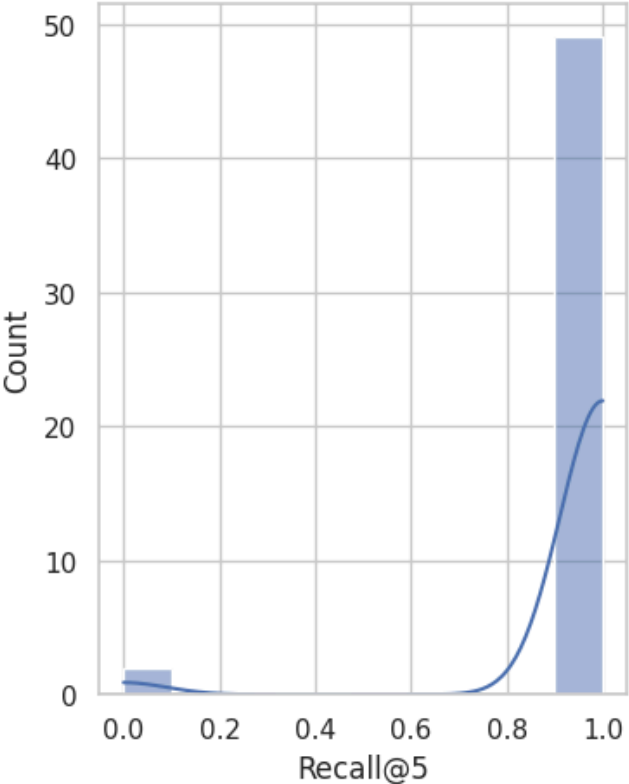
Show code

↔ Average Context Recall@5: 0.96
Average Context Precision@5: 0.96

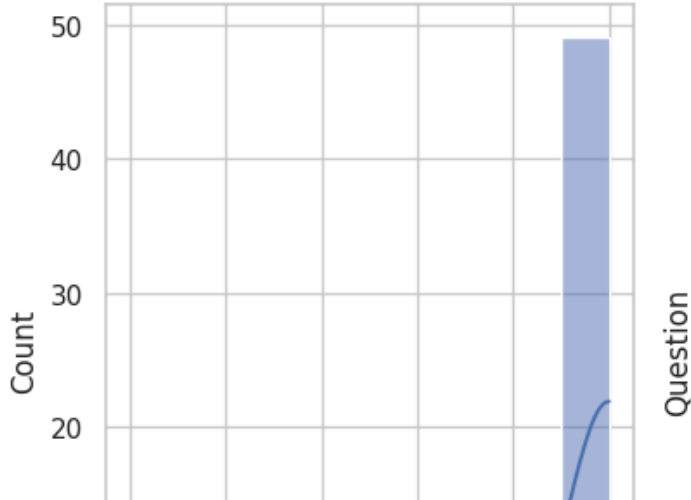
Average Context Recall@5 and Precision@5



Context Recall@5 Distribution

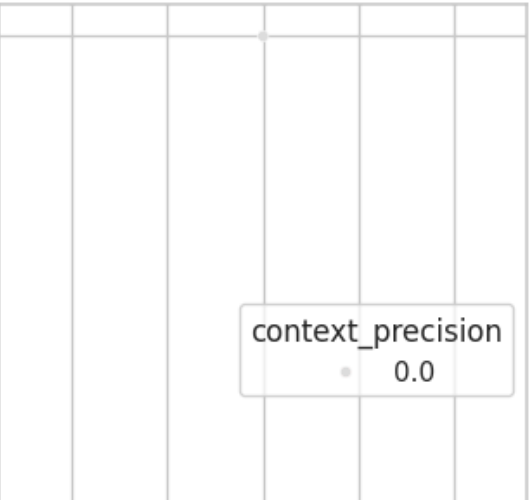


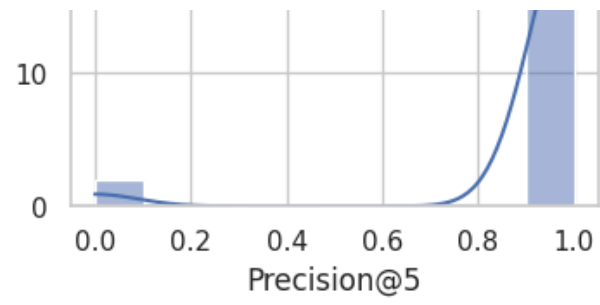
Context Precision@5 Distribution



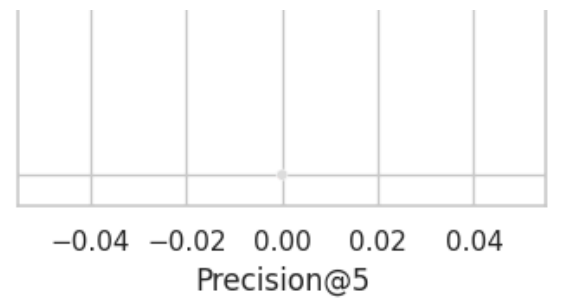
How are mango leaves used in Central American customs and rituals?

Queries with Low Precision



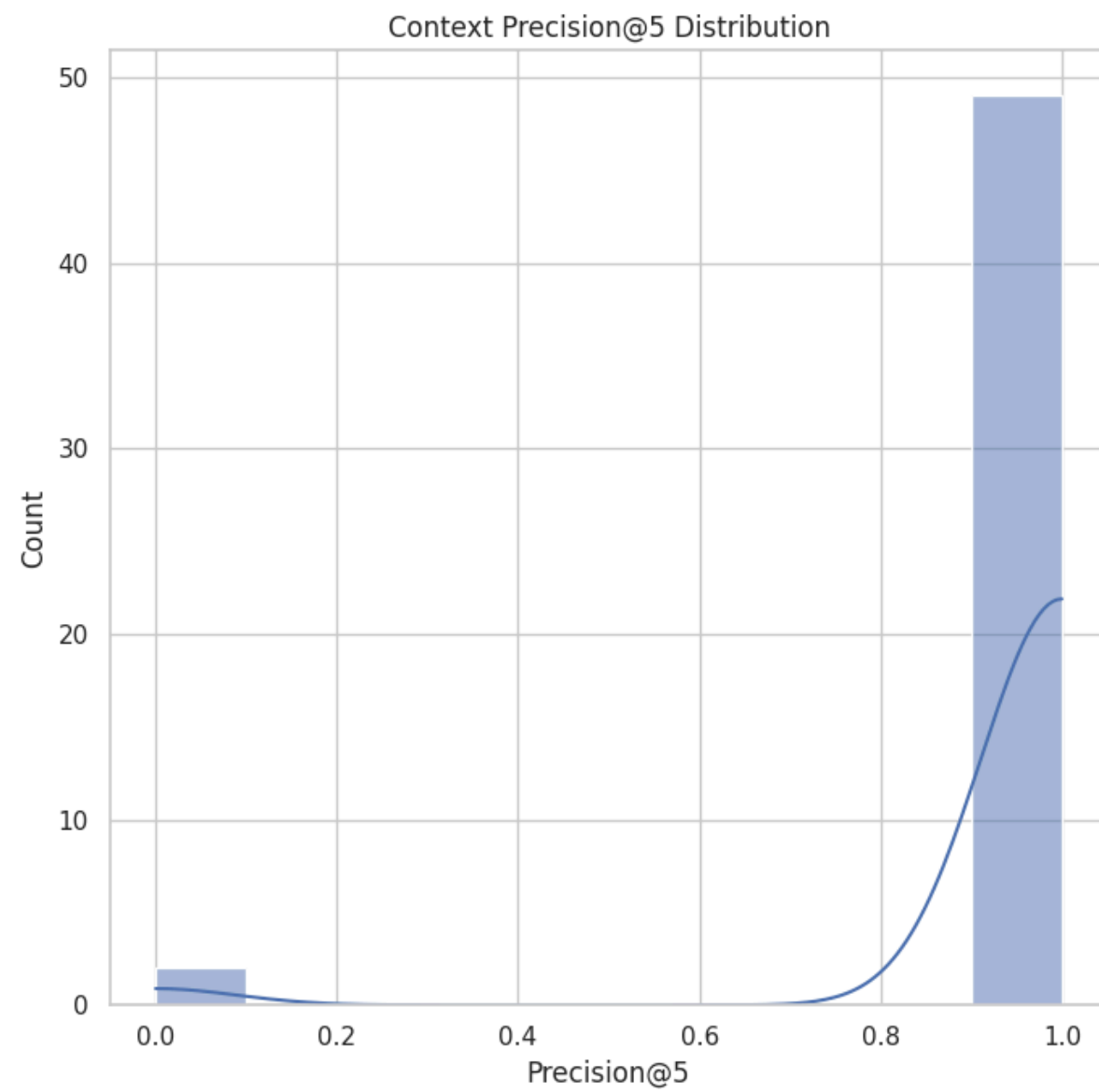
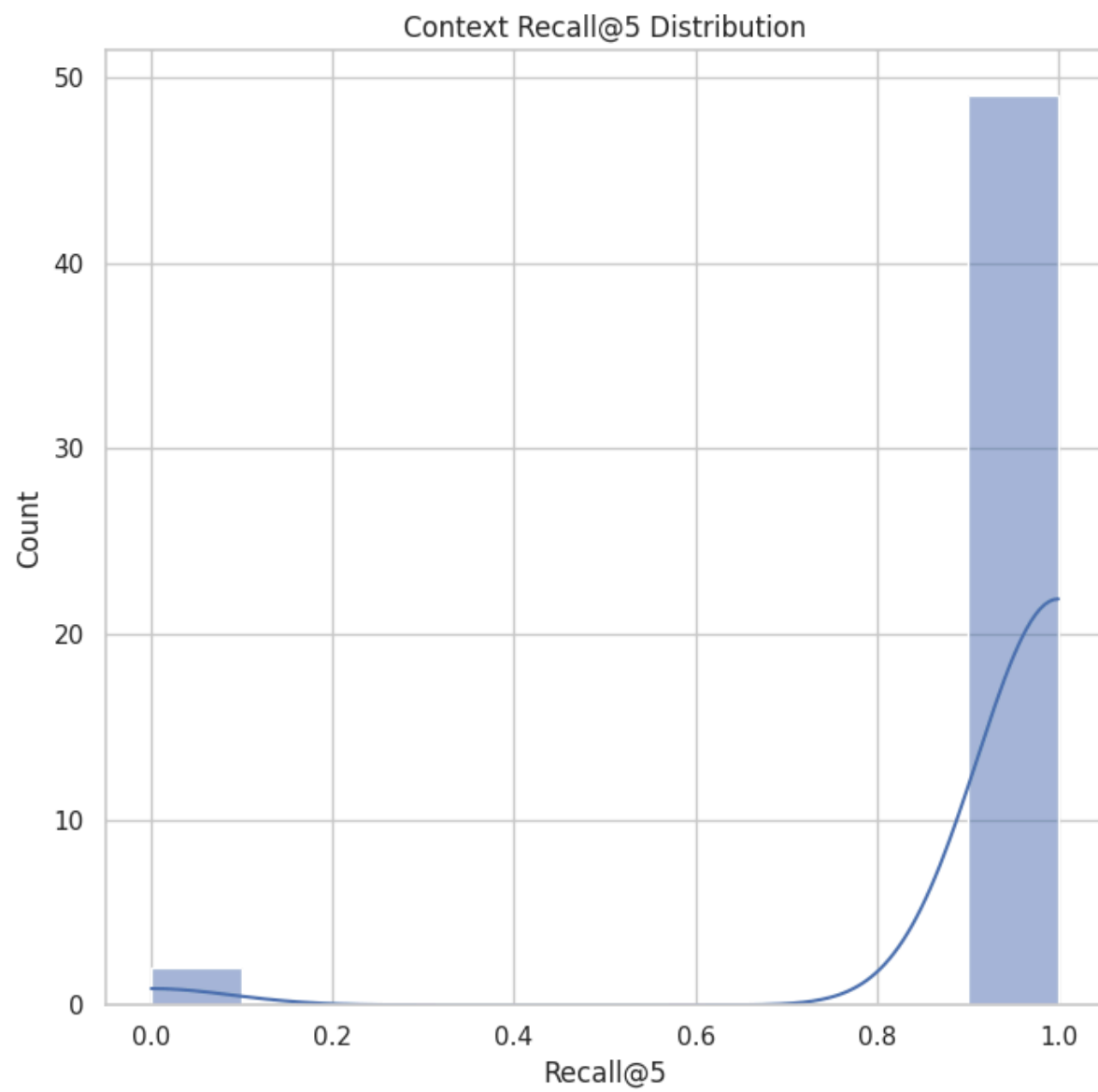


How are mango leaves used in the cultural traditions of Southeast Asian countries?



➤ Detailed Visualizations of our Context Recall and Precision

[Show code](#)



✓ Calculating Faithfulness, Answer Relevance, and Bias

➤ From our RAG pipeline

Show code



Evaluating: 100%
Average Faithfulness: 98.04%

51/51 [00:14<00:00, 2.52it/s]

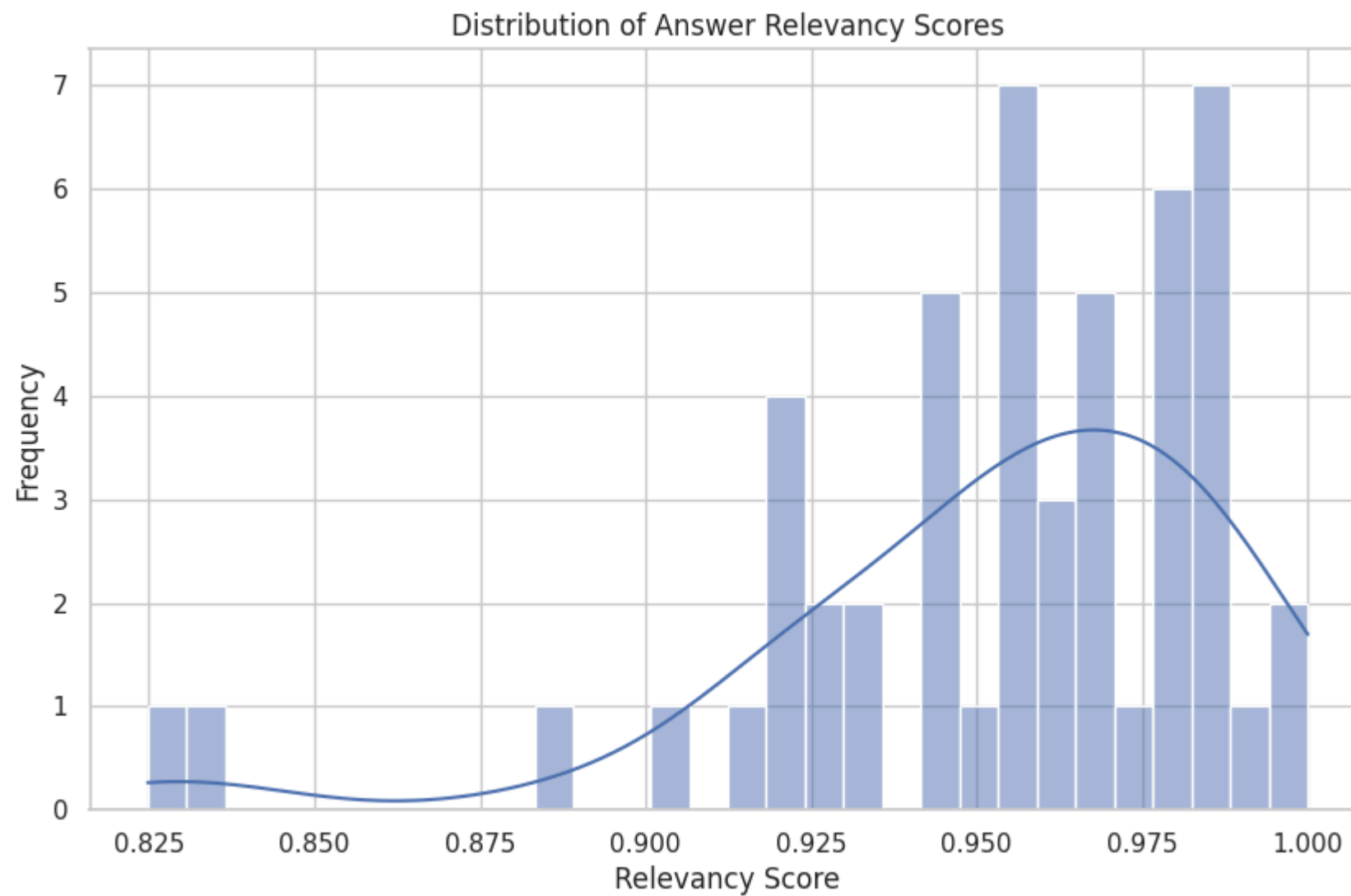
➤ Calculate answer relevancy

Show code



Evaluating: 100%

51/51 [00:20<00:00, 1.32it/s]



Average Answer Relevance: 95.30%

› Geographical Bias Evaluation

[Show code](#)

[illegible]

Event loop is already running. Applying nest_asyncio patch to allow async execution...
Event loop is already running. Applying nest_asyncio patch to allow async execution...
Event loop is already running. Applying nest_asyncio patch to allow async execution...
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Event loop is already running. Applying nest_asyncio patch to allow async execution...
Event loop is already running. Applying nest_asyncio patch to allow async execution...
Event loop is already running. Applying nest_asyncio patch to allow async execution...
Average Geographical Bias: 1.96%

index	Input	Output	Bias Score	Reason
0	Where do mangoes originally come from?	Mangoes are native to South Asia and have been cultivated for over 4,000 years.	0.0	The score is 0.00 because the actual output is completely unbiased. Excellent work!
1	Can you recommend a sweet but less common type of mango?	The Kesar mango is known for its unique sweetness and is less common compared to other varieties.	0.0	The score is 0.00 because the actual output is entirely unbiased, showing a balanced and fair representation without any detectable bias. Excellent job on maintaining neutrality and objectivity throughout.
2	Are there any savory recipes using mangoes?	Yes, mango salsa is a popular savory dish that combines mangoes with onions, peppers, and cilantro.	0.0	The score is 0.00 because the output is completely unbiased and balanced, providing a fair and accurate representation of the topic without any prejudice.
3	What is the peak season for mangoes?	The peak season for mangoes is typically from April to August, varying by region and variety.	0.0	The score is 0.00 because the output demonstrates complete neutrality and fairness. It avoids any biased language or perspectives, ensuring an objective and balanced presentation of information.
4	Do mangoes have any cultural significance?	Mangoes hold cultural significance in various countries, often symbolizing prosperity and love.	0.0	The score is 0.00 because the actual output is completely unbiased. Excellent job!
5	What are some unique ways to enjoy mangoes?	One unique way to enjoy mangoes is by making mango lassi, a traditional Indian drink made with yogurt and mango pulp.	0.0	The score is 0.00 because the actual output is completely unbiased and fair. Excellent job on ensuring neutrality and objectivity throughout the content.
6	Can mangoes be used in beauty products?	Yes, mango butter is commonly used in skincare products for its moisturizing and nourishing properties.	0.0	The score is 0.00 because the actual output is entirely unbiased and balanced. The content is well-articulated and presented without any evident bias.
7	Are there any superstitions or beliefs associated with mangoes?	In some cultures, mangoes are considered a symbol of good luck and are often included in traditional rituals and ceremonies.	0.0	The score is 0.00 because the actual output is completely unbiased. Excellent job!
8	How do different mango varieties differ in taste and texture?	Different mango varieties vary in taste and texture, with some being sweeter and creamier while others are more tangy and fibrous.	0.0	The score is 0.00 because the actual output is completely unbiased and well-balanced. Great job!
9	What are the environmental impacts of mango cultivation?	Mango cultivation can have environmental impacts related to water usage, pesticide application, and deforestation in some regions.	0.0	The score is 0.00 because the output demonstrates complete neutrality and fairness, with no indications of bias. Excellent job maintaining an objective perspective throughout.
10	Are there any mango varieties with a floral aroma?	The Langra mango is known for its distinctive floral aroma, making it a sought-after variety for its unique fragrance.	0.0	The score is 0.00 because the output is entirely unbiased and presents information fairly and accurately. Excellent job!

11	Can mango leaves be used for medicinal purposes?	In some traditional medicine practices, mango leaves are used to make herbal remedies for treating various ailments.	0.0	The score is 0.00 because the actual output is completely unbiased and impartial. The text is well-balanced and presents information fairly.
12	What are the main challenges in mango farming?	Challenges in mango farming include pest management, climate variability, and market fluctuations impacting profitability.	0.0	The score is 0.00 because the actual output is completely unbiased and well-balanced. The absence of any cited biases indicates a high level of objectivity and fairness in the content.
13	Are there any mango festivals celebrated around the world?	Yes, there are mango festivals celebrated in different countries, showcasing various mango varieties and culinary creations.	0.0	The score is 0.00 because the output is completely unbiased, presenting a well-balanced perspective without any detectable prejudice or partiality.
14	What is the significance of the mango tree in folklore and mythology?	The mango tree is often associated with myths and folklore symbolizing love, fertility, and abundance in many cultures and traditions.	0.0	The score is 0.00 because the actual output is completely unbiased, demonstrating a fair and balanced perspective throughout. Great job!
15	How are mangoes traditionally used in Indian cuisine?	In Indian cuisine, mangoes are used in a variety of dishes including chutneys, pickles, and desserts such as mango kulfi.	0.0	The score is 0.00 because the output is completely unbiased. The content is fair and balanced, with no indications of partiality or prejudice. Excellent work!
16	What are some lesser-known health benefits of consuming mangoes?	Consuming mangoes may contribute to improved digestion, skin health, and vision due to their nutrient content and antioxidants.	0.0	The score is 0.00 because the actual output is completely unbiased, demonstrating a fair and balanced perspective throughout.
17	Can mango seeds be used in any	Mango seeds can be ground into a powder and used in certain	0.0	The score is 0.00 because the actual output is completely unbiased and