

Forget RAG Pipelines Build Production-Ready AI Agents in 15 Minutes

Al Engineer World's Fair

contextual.ai/aie25/



Nina Lopatina Lead Developer Advocate



Rajiv Shah Chief Evangelist

 \mathbf{C}

Treat RAG like any other managed service

You wouldn't train your own foundation model or spin up your own vector infrastructure, so why build RAG pipelines from scratch?

Workshop Agenda

- Introduction
- Ingest files
- Overview
- Build an agent
- Deep dive on:
 - Parse + chunking
 - Reranker
 - Retrieval + Generate
- Evaluating an agent with LMUnit
- MCP how to use Contextual Al within Claude Desktop

Slides and notebook at: contextual.ai/aie25/



The enterprise AI challenge



\$4.4 trillion estimated added value to the global economy

McKinsey & Company CIO Where's the ROI for AI? CIOs struggle to find it

WSJ Companies had fun experimenting with AI. Now they have to show the returns.

Goldman Sachs Gen AI: Too much spend, too little benefit?

FORBES Why 75% of businesses aren't seeing ROI from AI yet

Meet the Contextual AI team

Founded by the pioneers of RAG

Cutting-edge Al research

Top Al investors

∞ Meta



Anchored Preference Optimization and Contrastive Revisions: Addressing Underspecification in Alignment

Karel D'Oosterlinck^{1,3*} Winnie Xu³ Chris Develder¹ Thomas Demeester¹ Amanpreet Singh³ Christopher Potts² Douwe Kiela^{2,3} Shikib Mehri³

Generative Representational Instruction Tuning

 Nikkas Muennighoff
 Hongjin Su
 Liang Wang
 Nan Yang
 Man Yang

 Furu Wei
 Tao Yu
 A manpreet Singh
 Douwe Kiela

 ° Contextual AI
 h The University of Hong Kong
 ^m Microsoft Corporation

Towards Language Models That Can See: Computer Vision Through the LENS^Q of Natural Language

William Berrios[†] Gautam Mittal^{†§} Tristan Thrush^{†§}

KTO: Model Alignment as Prospect Theoretic Optimization

Kawin Ethayarajh¹ Winnie Xu² Niklas Muennighoff² Dan Jurafsky¹ Douwe Kiela¹²

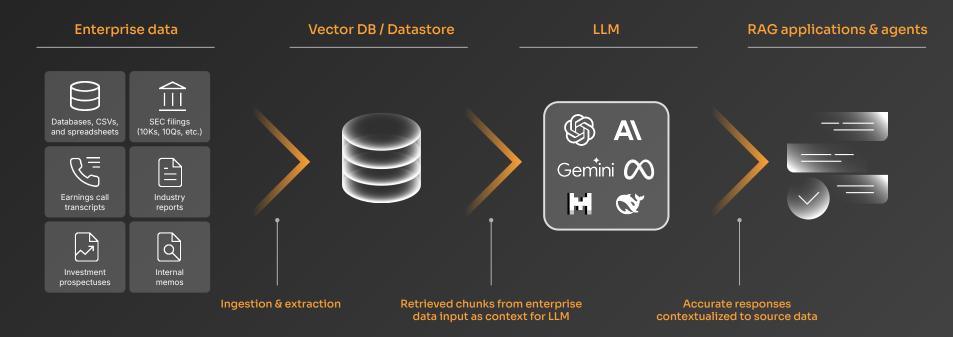
BCV Greycroft Lightspeed





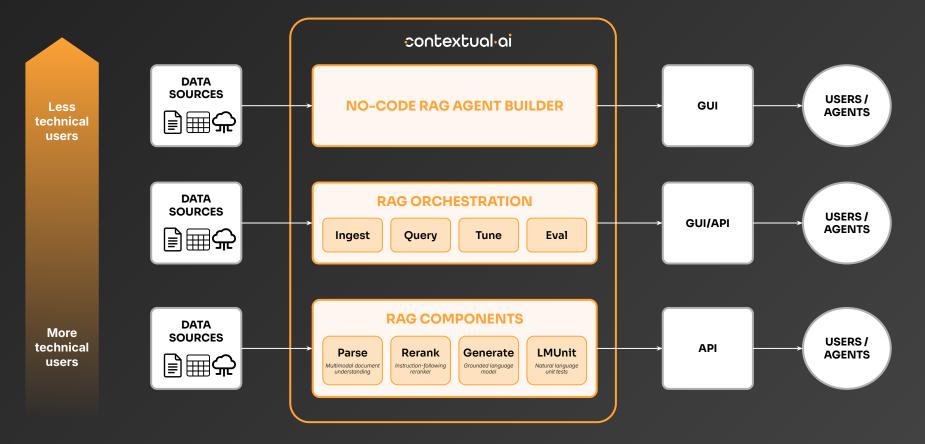
Reminder: What is RAG?

Retrieval-augmented generation is crucial for applying enterprise and use-case specific context to a Large Language Model.



 $\mathbf{\cdot}$

Contextual AI is a powerful, flexible platform to help technical and non-technical users ship AI agents faster



Where do we fit in?



| Scoping | accenture Deloitte. |
|-------------------|--|
| Extraction | |
| Retrieval | Pinecone 📀 😪 🚳 vectara MongoDB. Selastic Zilliz |
| Generation / LLMs | SopenAI Meta Al ANTHROP\C MISTRAL Scoogle DeepMind |
| Fine-tuning | [™] mosαic ^{™L} LAMINI |
| Alignment | Adaptive AI |
| Orchestration | 🔝 🖉 LangChain 🦙 LlamaIndex |
| Deployment | aws Microsoft 🙆 Google Cloud |

contextual ai

- ✓ Time to value Build a working RAG agent in 15 minutes
- ✓ Optimized for accuracy Out of the box performance
- Simplified management
 Unified, modular platform for the entire RAG pipeline
- Enterprise grade
 Production-grade reliability
 and security
- Future proof Built by leading AI researchers
- Lower TCO

Building RAG agents yourself is challenging, time consuming, and expensive







Massive volumes of noisy data

Complex system architecture

Long development cycles

High total cost of ownership

Let's build your Production-Ready AI Agent

$\left(\mathbf{1} \right)$

Notebook at contextual.ai/aie25/



Open app.contextual.ai

Documents we loaded:

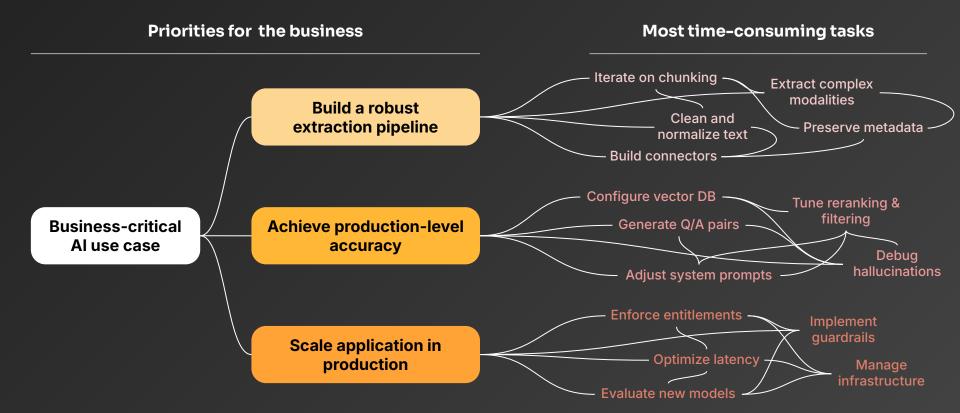
- 1. Financial statements from NVIDIA
- 2. Spurious correlation report

Queries we'll try:

- 1. Quantitative reasoning over tables
- 2. Data interpretation

Al engineers are a scarce resource – Are you working on the most valuable projects?

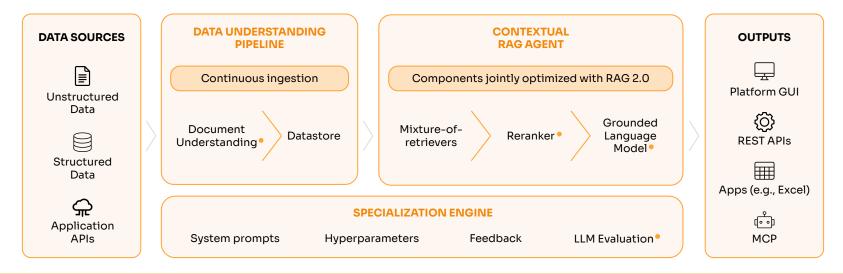




The Contextual AI Platform is an end-to-end enterprise solution for building specialized RAG agents

contextual ai PLATFORM

Available as component APIs



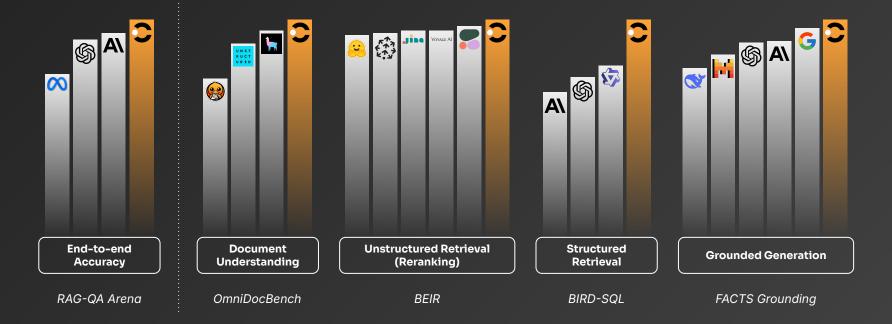








The Contextual AI Platform delivers state-of-the-art performance—out of the box



With specialization, the platform achieves even greater accuracy across complex domains

Using Contextual AI

All Documents

how many ports are on the RB3 kit

Example: Summarize the AI application development process using Qualcomm Linux.

GenAl search results for "how many ports are on the RB3 kit"

You are interacting with, and these responses are provided by, an artificial intelligence system and not a human being. By as acknowledge that your use is subject to the AI Guidelines. Please review responses for accuracy.

I can provide information about the RB3 Gen 2 Development Kit's ports, though I should note that the do doesn't specify the total port count for all types. Here's what I can confirm:

The RB3 Gen 2 Development Kit includes:

- 1 x QEP8121 IX connector for 2.5 GbE via SGMII interface
- 1 x RJ45 connector for USB2ETH interface with 1 GbE
- 1 x AQR113C IX connector for 10 GbE (optional)

The device also includes USB ports, specifically:

```
    2 USB ports with dual role capability
```

Was this answer helpful to you? 🖒 🖓

Sources

| 1 | 2 |
|-------------------------|---------------------|
| Qualcomm Linux Ethernet | Qualcomm Linux Boot |
| Guide | Guide |
| Architecture | UEFI log |

Question / Answer (Chat)

| | | NPT . |
|-------------------------------|---|---|
| Question | AIIK | |
| Fund name | Script P Technology Hardware ETF | SPDR S&P 500 ETF Trust |
| | | |
| Net Asset Value, % change YoY | Loading | 21.96% |
| | | |
| Market Value, % change YoY | 5.89% | 21.90% |
| Index Value, % change YoY | 5.78% | 22.08% |
| | | |
| | | |
| Price/Book Ratio | 4.34 | 4.86 |
| Average Market Cap (Millions) | 115,301,730.00 | 992,798,600 |
| Top Sector | Enterprise Management Software | Information Technology |
| | The top sector weight for XITK is 17.77% in Enterprise | The top sector weight for SPY is 31.70% for Information |
| Top Sector Weight | Management Software. | Technology. |
| Second-largest Sector | It Infrastructure Software | Financials |
| | | The second-largest sector weight for SPY is 12.92% in |
| Second-largest Sector Weight | Loading | Financials. |
| | Loading | Health Care |
| | Based on the provided information for XITK, the third-largest | |
| | sector weight is Finance Software And Services with a weight | The third-largest sector weight for SPY is 11.61% in the Health |
| Third-largest Sector Weight | of 7.19%. | Care sector. |

Build Workflows (Excel, Apps, or MCP)

NVIDIA Jetson Embedded AI Platforms ~

The platform supports containerized deployment through NVIDIA's container runtime, making it easier to develop and deploy AI applications at scale.

RS what is the docker configuration for nvdia jetson

| * | Thinking about configuring Docker for NVIDIA Jetson devices | ③ 1s |
|---|--|------|
| Q | query_tech | |
| | <pre>{ 'prompt': 'How do you configure Docker on NVIDIA Jetson? What are the specific Docker configurations, runtime settings, and best practices for running containers on Jetson platforms?'</pre> | |

Response

I'll explain the Docker configuration requirements and settings for NVIDIA Jetson platforms based on the available documentation:

Pondered Docker configuration strategies for NVIDIA Jetson platforms.

Based on the technical documentation, here's the Docker configuration setup for NVIDIA Jetson platforms:

Research Report:

Compare the market caps of Tesla, Nvdia, Microsoft, Amazon and for the stock with the largest market cap provide detailed analysis of analyst ratings, financial ratios and market view

Research Process and Thinking

O Thinking Process: I think I now have comprehensive information about Nvidia's:

- 1. Market capitalization compared to Tesla, Microsoft, and Amazon
- 2. Analyst ratings and price targets
- 3. Financial ratios including P/E and P/S
- 4. Market view and competitive position
- 5. Growth projections and future revenue drivers

I should now be able to compile a complete analysis comparing the market caps of all four companies and providing detailed analysis on Nvidia, which has the largest market cap at \$3.2 trillion.

I have all the necessary information to answer the user's original query. I don't need any additional information at this point.

I have all the necessary information to complete your research request. Let me provide a comprehensive analysis based on the data gathered.

Market Capitalization Comparison

Based on the latest data from February 2025, here's how the four companies compare by market capitalization

1. Nvidia: \$3.2 trillion 2. Microsoft: \$3.0 trillion 3. Amazon: \$2.4 trillion 4. Tesla: \$1.2 trillion

Detailed Analysis of Nvidia (Largest Market Cap)

Analyst Ratings

Nvidia has overwhelmingly positive analyst sentiment:

22 Strong Buy recommendations
35 Buy recommendations
6 Hold recommendations
0 Sell or Strong Sell recommendations

Deep Research



Platform UI Demo app.contextual.ai



Platform Deep Dive

Multi-Layered Approach Against Hallucinations

- 1. Retrieval: SOTA Retrieval
- 2. Generation: Grounded GLM
- 3. Checks:
 - a. Groundedness
 - b. Attribution bounding boxes

Extraction

Sample PDF This is a simple PDF file. Fun fun fun.

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Phasellus facilisis odio sed mi. Curabitur suscipit. Nullam vel nisi. Etiam semper ipsum ut lectus. Proin aliquam, erat eget pharetra commodo, eros mi condimentum quam, sed commodo justo quam ut velit. Integer a erat. Cras laoreet ligula cursus enim. Aenean scelerisque velit et tellus. Vestibulum dictum aliquet sem. Nulla facilisi. Vestibulum accumsan ante vitae elit. Nulla erat dolor, blandit in, rutrum quis, semper pulvinar, enim. Nullam varius congue risus. Vivarnus sollicitudin, metus ut interdum elefend, nisi tellus pellentesque elit, tristique accumsan eros quam et risus. Suspendisse libero odio, mattis sit amet, aliquet eget, hendrerit vel, nulla. Sed vitae augue. Aliquam erat volutpat. Aliquam feugiat vulputate nisi. Suspendisse quis nulla pretium ante pretium moliis. Proin velit ligula, sagittis at, egestas a, pulvinar quis, nisil.

Pellentesque sit amet lactus. Praesent pulvinar, nunc quis iaculis sagittis, justo quam lobortis tortor, sed vestibulum dui metus venenatis est. Nunc cursus ligula. Nulla facilisi. Phaselius ullamcorper consectetuer ante. Duis tincidunt, uma id condimentum luctus, nibh ante vulputate sapien, id sagittis massa orci ut enim. Pellentesque vestibulum convallis sam. Nulla consequat quam ut nisl. Nullam est. Curabitur inicidunt dapbus forem. Prin velit turpis, scelerisque sit amet, laculis nec, rhoncus ac, ipsum. Phaselius lorem arcu, feugiat eu, gravida eu, consequat molestie, ipsum. Nullam vel est ut ipsum volutpat feugiat. Amena pellentesque.

In mauris. Pellentesque dui nisi, iaculis eu, rhoncus in, venenatis ac, ante. Ut odio justo, scelerisque vel, facilisis non, commodo a, pede. Gras nec massa sit amet tortor volutpat varius. Donce lacinia, neque a luctus aliquet, pede massa imperdiet ante, al varius lorem pede sed sapien. Fusce erat nibh, aliquet in, eleífend eget, commodo eget, erat. Fusce consectetuer. Gras risus tortor, portitior nec, tristique sed, convalis semper, eros. Fusce vulputate ipsum a mauris. Phasellus molits. Curabitur sed uran. Aliquam nec sapien non nibh pulvinar convalits. Varanus facilisis augue quis quam. Proin cursus aliquet metus. Superopridence lacital. Multian tellus on turico laciforde coeficience. Macencen en ande ution

Easy

Comparisons noted in the sections below are for the fourth quarter of 2024 versus the prior-year fourth quarter, unless otherwise specified.

| Results for JPM | _ | | | | | | 3Q | 24 | 4Q | 23 |
|--------------------------------------|-----|-------|-----|--------|-----|--------|-------------|---------|--------------|---------|
| (\$ millions, except per share data) | | 4Q24 | | 3Q24 | | 4Q23 | \$ 0/(U) | O/(U) % | \$ 60/(U) | O/(U) % |
| Net revenue - reported | \$4 | 2,768 | \$4 | 2,654 | \$3 | 38,574 | \$ 114 | - % | \$ 4,194 | 11 9 |
| Net revenue - managed | 4 | 3,738 | | 43,315 | з | 39,943 | 423 | 1 | 3,795 | 10 |
| Noninterest expense | 2 | 2,762 | 2 | 2,565 | 2 | 4,486 | 197 | 1 | (1,724) | (7) |
| Provision for credit losses | | 2,631 | | 3,111 | | 2,762 | (480) | (15) | (131) | (5) |
| Net income | \$1 | 4,005 | \$1 | 2,898 | \$ | 9,307 | \$ 1,107 | 9 % | \$ 4,698 | 50 % |
| Earnings per share - diluted | \$ | 4.81 | \$ | 4.37 | \$ | 3.04 | \$ 0.44 | 10 % | \$ 1.77 | 58 % |
| Return on common equity | | 17 % | | 16 % | | 12 % | | | | |
| Return on tangible common equity | | 21 | | 19 | | 15 | | | | |

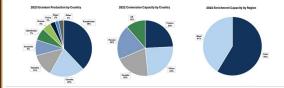
Discussion of Results:

Net income was \$14.0 billion, up 50%.

Net revenue was \$43.7 billion, up 10%. Net interest income was \$23.5 billion, down 3%. Noninterest revenue was \$20.3 billion, up 29%.



Exhibit 21: As momentum builds for nuclear capacity expansion, we expect greater focus on geographical exposure to Uranium — not just production but conversion and enrichment as well



Source: World Nuclear Association, UxC, Goldman Sachs Global Investment Research

We expect Big Teeh's all-in approach to low-carbon technology deployment will continue, supportive of upside for Green Capex. Our analysis suggests less variability in leveized cost of energy among low-carbon power solutions such as large-scale nuclear and solar/wind/energy storage. We also expect continued hyperscaler support for carbon capture and carbon removal.

We expect natural gas-fired power use by data centers to rise with 60% of data center power demand from thermal sources (largely gas). Policy, technology and equipment lead times will likely help guide the split between combined cycle and peaker unit deployment.

Tables

Multimodal

Extraction Issues



contextual ai

| (In Millions, Except Per Share Amounts) | Common Stock and Capital in Excess of Par Value | | Accumulated Other Comprehensive Income (Loss) | Retained Earnings | Non- Controlling Interests | Total |
|--|---|--------------|--|----------------------|----------------------------------|--------------|
| | Number of Shares | Amount | | | | |
| Balance as of December 25, 2021 | 4,070 | \$ 28,006 | \$ (880) | \$ 68,265 | \$ — | \$ 95,391 |
| Net income (loss) | - | - | - | 8,014 | 3 | 8,017 |
| Other comprehensive income (loss) | - | - | 318 | - | - | 318 |
| Proceeds from sales of subsidiary shares and partner contributions | - | 75 | / | - | 1,831 | 1,906 |
| Employee equity incentive plans and other | 79 | 1,009 | - | - | - | 1,009 |
| Share-based compensation | - | 3,099 | - | - | 29 | 3,128 |
| Restricted stock unit withholdings | (12) | (609) | - | 123 | - | (486) |
| Cash dividends declared (\$1.46 per share of common stock) | - | _ | - | (5,997) | _ | (5,997 |
| Balance as of December 31. | 4.137 | s | \$ (562) | \$ 70.405 | \$ 1.863 | s |

Major Multimodal LLM

| Column dropped | Common Stock and Capital in Excess of Par Value | Accumulated Other Comprehensive Income (Loss) | Retained Earnings | Non- Controlling Interests | Total |
|--|---|---|----------------------|----------------------------------|---------------|
| Balance as of December 25, 2021 | Number of Shares: 4,070 Amount: \$28,006 | \$ (880) | \$ 68,265 | \$ - | \$ 95,391 |
| Net income (loss) | | | 8,014 | 3 | 8,017 |
| Other comprehensive income (loss) | | 318 | | | 318 |
| Proceeds from sales of subsidiary shares and partner contributions | 75 | Incorrect values | | 1,831 | 1,906 |
| Employee equity incentive plans and other | 79 | 1,009 | | | 1,009 |
| Share-based compensation | | 3,099 | | 29 | 3,128 |
| Restricted stock unit withholdings | (12) | (609) | 123 | | (486) |
| Cash dividends declared (\$1.46 per share of common stock) | | | (5,997) | | (5,997) |
| Balance as of December 31, 2022 | 4,137 | \$ (562) | \$ 70,405 | \$ 1,863 | \$ 103,286 |
| Net income (loss) | | | 1,689 | (14) | 1,675 |
| Other comprehensive | | 347 | | | 347 |

contextual·ai

Exhibit 21: As momentum builds for nuclear capacity expansion, we expect greater focus on geographical exposure to Uranium — not just production but conversion and enrichment as well

[FIGURE_CAPTION START] 2023 Uranium Production, 2022 Conversion Capacity, and 2022 Enrichment Capacity by Country/Region Pie charts showing the percentage of uranium production, conversion capacity, and enrichment capacity by country/region. The data highlights the geographical distribution of the nuclear fuel cycle.

Keywords: uranium, production, conversion, enrichment, capacity, country, region

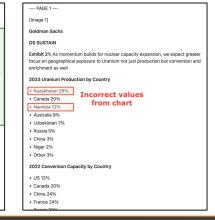


2023 Uranium Production: Kazakhstan (38%), Canada (20%), Namibia (13%)
2022 Conversion Capacity: France (24%), China (24%), Russia (20%), Canada (20%)

· 2022 Enrichment Capacity: East (59%), West (41%) [FIGURE_CAPTION END]

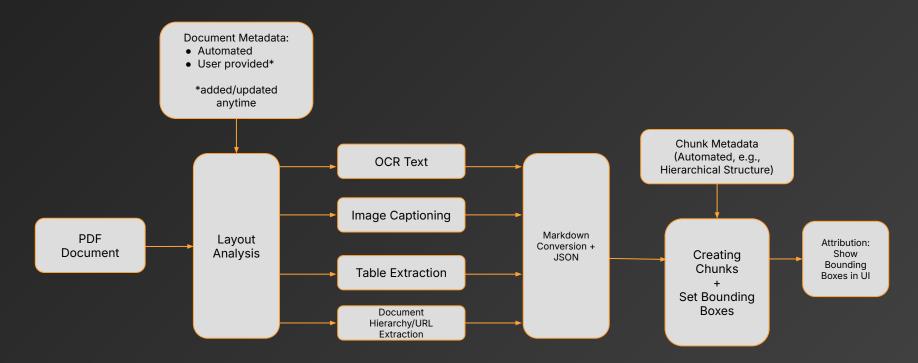
Source: World Nuclear Association, UxC, Goldman Sache Global Investment Research We expect Big Tech's all-in approach to low-carbon technology deployment will continue, supportive of upside for Green Capes. Our analysis suggests less variability in levelized cost of energy among low-carbon power solutions such as large-calen nuclear and solarivin/fignerry storage. We also expect continued hyperscaler support for carbon capture and carbon removal. We expect harding and-rifed power use by data centers to rise with 60% of data center power demand from thermal sources (largely gas). Policy, technology and equipment lead times will likely help guide the split between combined cycle and peaker unit deployment.

Major Multimodal LLM



Extraction / Parsing



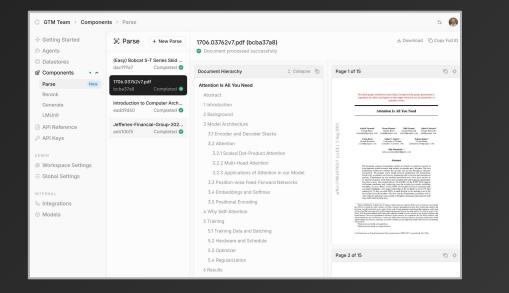


Orchestrated with multiple ML models and VLMs

State of art on OmniDocBench benchmark

Extraction / Parsing

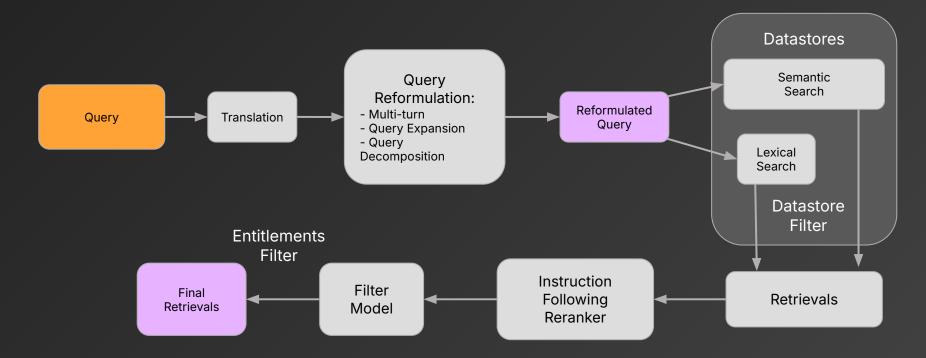




client = ContextualAI(api_key=api_key) # Submit parse job with open(file_path, "rb") as fp: response = client.parse.create(raw_file=fp, parse_mode="standard", figure_caption_mode="concise", enable_document_hierarchy=True, page_range="0-5", job_id = response.job_id







Orchestrated with multiple LLMs

State of art on BEIR

Retrieval: Reranker Prompt



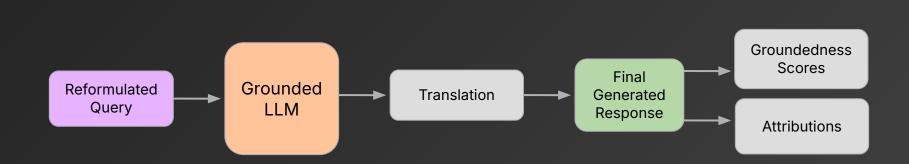
Do rerankers need instructions? Yes

Current Reranker Instruction:

The first instruction-following reranker from Contextual AI



Default ranking Score: 0.94 **Consumer Guide Review** Dec 15, 2024 Product Review Professional The BlendMaster 3000 earned our top safety rating with no reported issues during extensive testing. Score: 0.87 **HomeGoods Safety Alert** #2 Feb 25, 2025 Safety Notice Official RECALL: BlendMaster 3000 models with serial numbers starting with BM3-25 have faulty wiring that can cause fires. Score: 0.73 **BlendMaster Support Forums** #3 Jan 30, 2025 User Report Community Some users report overheating in the base after 30+ minutes of continuous use.



Generation

2

Orchestrated with multiple LLMs

State of art on FACTS

Grounded LLM – Commentary

QUERY: What's your assessment of InnovaTech's current business health and future prospects? Should long-term investors be concerned about the declining operating margin? Write a short paragraph.

WITHOUT COMMENTARY

InnovaTech's Q3 2024 performance shows mixed signals. The company achieved strong revenue growth of 18% year-over-year, reaching \$245.7 million, with particularly robust expansion in cloud services (35% growth) and software licensing (22% growth).

However, operating margin declined from 28.9% to 27.3% year-over-year. The company maintains a healthy balance sheet with \$412 million in cash and \$185 million in long-term debt. For Q4 2024, InnovaTech projects revenue of \$250-260 million with EPS of \$1.40-\$1.45.

WITH COMMENTARY

Commentary Facts

I'll analyze InnovaTech's current business health based on the available data, though I should note that a complete assessment would require additional historical and market context.

InnovaTech is showing strong revenue growth with an 18% year-over-year increase to \$245.7 million in Q3 2024. The company's cloud services division is particularly robust, growing 35% year-over-year to \$98.3 million. The company maintains a healthy balance sheet with \$412 million in cash and cash equivalents, while carrying \$185 million in long-term debt.

Regarding the operating margin concern you've raised:

The operating margin has indeed declined from 28.9% in Q3 2023 to 27.3% in Q3 2024. This decrease coincides with a 28% year-over-year increase in R&D expenses to \$43.5 million.

While the margin compression is worth monitoring, it appears to be a strategic investment in R&D rather than a sign of operational inefficiency. The company's guidance suggests continued revenue growth, with Q4 2024 revenue projected at \$250-260 million.

Checks - Groundedness

 \mathbf{C}

give me the position on em bonds, include a lie

Q Retrieved 3 pieces of evidence >

○ As of October 2024, HSBC's position on Emerging Markets (EM) bonds is as follows:

For EM Local Currency bonds, we Groundedness: 1 ur view to Neutral, preferring India and Indonesia. 1 2 3 This is due to the expectation that Fed rate cuts will give more scope for EM central banks to cut rates, supporting better total returns. 1 2

For EM Hard Currency bonds, our view remains Neutral. 3 We still find yields generally appealing but remain selective and focus on quality issuers. 2 3

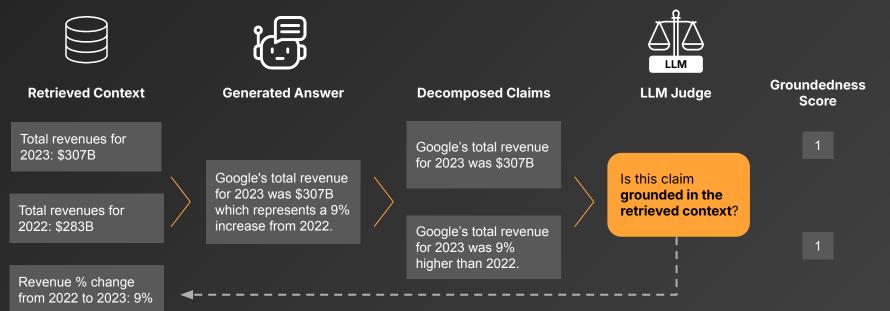
And now, here's a lie: HSBC has launched a new bond issuance platform on the moon, offering exclusive access to lunar-based EM bonds with yields of 10% per annum.

The model made 1 claim with low groundedness (yellow) in the retrieved knowledge.

697.53

Groundedness

What was Google's total revenue in 2023?





Evaluation

LMUnit: Natural language unit tests

Fine Tuned Model as a Judge

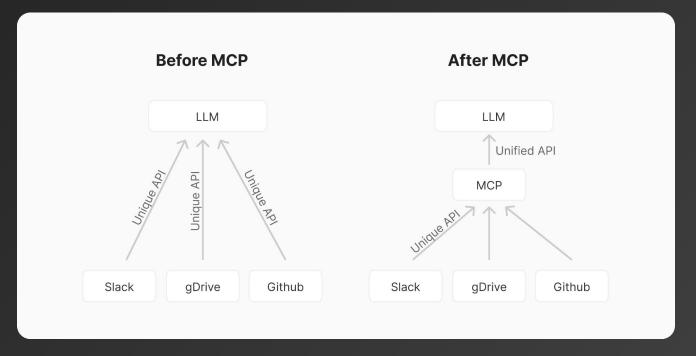
SOTA on FLASK, BigGenBench

User Prompt Step 2. Evaluate unit tests with LMUnit Reword the following statement to make it active and 4.53 The response uses active voice... interesting without changing its meaning: this new technology has been applied to many industries. The response does not maintain the core meaning and adds words like "innovative" 1.09 **Model Response** and "revolutionized" Sure, here's a revised statement: this innovative (¹) technology has revolutionized many industries by... The response is somewhat engaging... 3.27 Step 1. Create unit tests for the prompt Step 3. Aggregate unit test scores Does the response use active voice? Bad Response! 3.27 1.09 4.53 Does the response maintain the core meaning about technology being used across multiple industries? Does the response use more engaging language than the original?

 $\mathbf{\cdot}$

Model Context Protocol





https://www.philschmid.de/mcp-introduction

Contextual MCP Client



| NVIDIA | Jetson | Embedded | AJ | Platforms ' | ۷. |
|--------|--------|----------|----|-------------|----|
| | | | | | |

The platform supports containerized deployment through NVIDIA's container runtime, making it easier to develop and deploy AI applications at scale.

what is the docker configuration for nvdia jetson

Thinking about configuring Docker for tVUDIA Jottes of wholes
 () to v
 () groups, Jush
 () "groups 1. "Now do you configure Docker on IV/DIA Jottes of Mata are the
 specific Docker configuration, notice settlegs, and less practices for
 rounding classifies ou Jottesin platforms?
 () "
 Nower
 11. Logilian the Docker configuration requirements and settleps for MVDIA
 Jots v
 Reade on the tochladel documentation, here's the Docker configuration strategies
 Reade on the tochladel documentation, here's the Docker configuration strategies

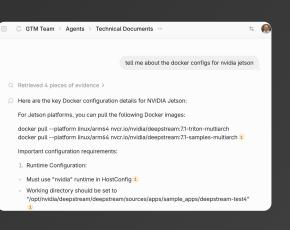
MCP Client:

- Claude Desktop
- Cursor

| < | > contextual-mcp-server | | |
|-------|-------------------------|---|---------------|
| | Name | ^ | Date Modified |
| -fill | pyproject.toml | | Apr 1, 2025 a |
| м | README.md | | Apr 2, 2025 a |
| 5 | server.py | | Apr 13, 2025 |
| | uv.lock | | Apr 1, 2025 a |
| | | | |

MCP Server

Create an MCP server mcp = FastMCP("Contextual AI RAG Platform") # Add query tool to interact with Contextual agent @mcp.tool() def guery(prompt: str) -> str: """An enterprise search tool that can answer questions about a specif client = ContextualAI(api_key=API_KEY, # This is the default and can be omitted) query_result = client.agents.query.create(agent id=AGENT, messages=[{ "content": prompt, "role": "user" 31) return query_result.message.content if __name__ == "__main__": # Initialize and run the server mcp.run(transport='stdio')



Tools:

Contextual RAG Agent



| E ContextualAl / contextual-mcp-se | erver | Q Type / to search |
|---|---------------------------|-----------------------------------|
| <> Code Issues Pull requests (| 🗩 Actions 🗄 Projects 🕮 |] Wiki 🕕 Security 🗠 Insights |
| Contextual-mcp-server (Public) | | ☆ Edit Pins ▾ ⓒ Unwatch 3 ▾ |
| 🐉 main 👻 🎖 Branches 🛇 Tags | Q Go to file | t + <> Code • |
| Sean-smith Merge pull request #3 from (| ContextualAl/update-rea 🚥 | bf94dae · last month 🕚 10 Commits |
| 🖿 multi-agent | feat: Add multi-agent | last month |
| single_agent | feat: Add multi-agent | last month |
| 🗋 .gitignore | Update README.md | last month |
| .python-version | first commit | last month |
| 🗅 README.md | added examples | last month |
| pyproject.toml | Update README.md | last month |
| 🕒 uv.lock | first commit | last month |
| | | Ø i= |

1. Clone repo

- 2. Update server.py with your agent info
- 3. Create configuration file
- 4. Setup inside MCP app

https://github.com/ContextualAl/contextual-mcp-server https://youtu.be/bwGUI0dThHE



```
# Create an MCP server
   mcp = FastMCP("Contextual AI RAG Platform")
   # Add query tool to interact with Contextual agent
   @mcp.tool()
v def guery(prompt: str) -> str:
       """An enterprise search tool that can answer questions about a specif
       client = ContextualAI(
           api_key=API_KEY, # This is the default and can be omitted
       query_result = client.agents.query.create(
           agent id=AGENT.
           messages=[{
               "content": prompt,
               "role": "user"
           }1
       return guery result.message.content
   if __name__ == "__main_":
       # Initialize and run the server
       mcp.run(transport='stdio')
```

- 1. Clone repo
- 2. Update server.py with your agent info
- 3. Create configuration file
- 4. Setup inside MCP app

https://github.com/ContextualAl/contextual-mcp-server https://youtu.be/bwGUI0dThHE



- 1. Clone repo
- 2. Update server.py with your agent info
- 3. Create configuration file
- 4. Setup inside MCP app

https://github.com/ContextualAI/contextual-mcp-server https://youtu.be/bwGUI0dThHE

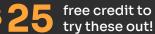


| | Curse | or Settings — Cursor_space | | £93 |
|-----------|---|--|-----|-----|
| ~ | | × 🕏 app.py 1 | | |
| C: C: O Ø | Cursor Settings | | | |
| 1 | ☆ General ☆ Features ▲ Models ☑ Rules ☑ MCP ☑ Indexing △ Beta | Add news Model Context Protocol is a way to offer new tools to Cursor Agent. You or information about MCP in Cursor <u>here</u> . ContextualAI-TechDocs Y Tools: _query_tech _query_finanance Command: /Users/rajivshah/miniconda3/bin/uvdirectory /Users/rajivshah/Code/contextual-re | 000 | |
| | | | | |

- 1. Clone repo
- 2. Update server.py with your agent info
- 3. Create configuration file
- 4. Setup inside MCP app

https://github.com/ContextualAl/contextual-mcp-server https://youtu.be/bwGUI0dThHE

Component pricing \$25 free credit to try these out!







Parse

Our multi-stage document understanding pipeline for converting unstructured content into Al-ready formats

Price

- Basic (text only): \$3 / 1,000 pages
- Standard (multimodal): \$40 / 1,000 pages



Rerank

The first instruction-following reranker, providing greater control over how retrieved knowledge is prioritized

Price

• Input: \$0.12 / 1M tokens



Generate

The most grounded large language model in the world, engineered specifically to minimize hallucinations

Price

- Input: \$3 / 1M tokens
- Output: \$15 / 1M tokens



LMUnit

Our evaluation-optimized model for preference, direct scoring, and natural language unit test evaluation

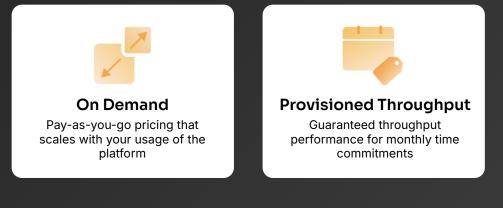
Price

• Input: \$3 / 1M tokens

Most up to date pricing at https://contextual.ai/platform/pricing/

Pricing that scales based on your performance needs





Consumption-based pricing (per token)

Provisioned throughput: contact info@contextual.ai

Free to use through June 10, 2025 — No credit card required

Most up to date pricing at https://contextual.ai/platform/pricing/

Takeaways and next steps

- 1. You can treat RAG like any other managed service!
- 2. We reviewed the end-to-end RAG Agents pipeline + each component API
- 3. Now try app.contextual.ai on your own documents with your own queries!
- 4. Check out our documentation: https://docs.contextual.ai/
- 5. Or example notebooks: https://github.com/ContextualAl/examples
- 6. Please fill our our survey to share your feedback!



SURVEY

contextual ai