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#FABCONSQLCON2026

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Microsoft Fabric
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SQLCON

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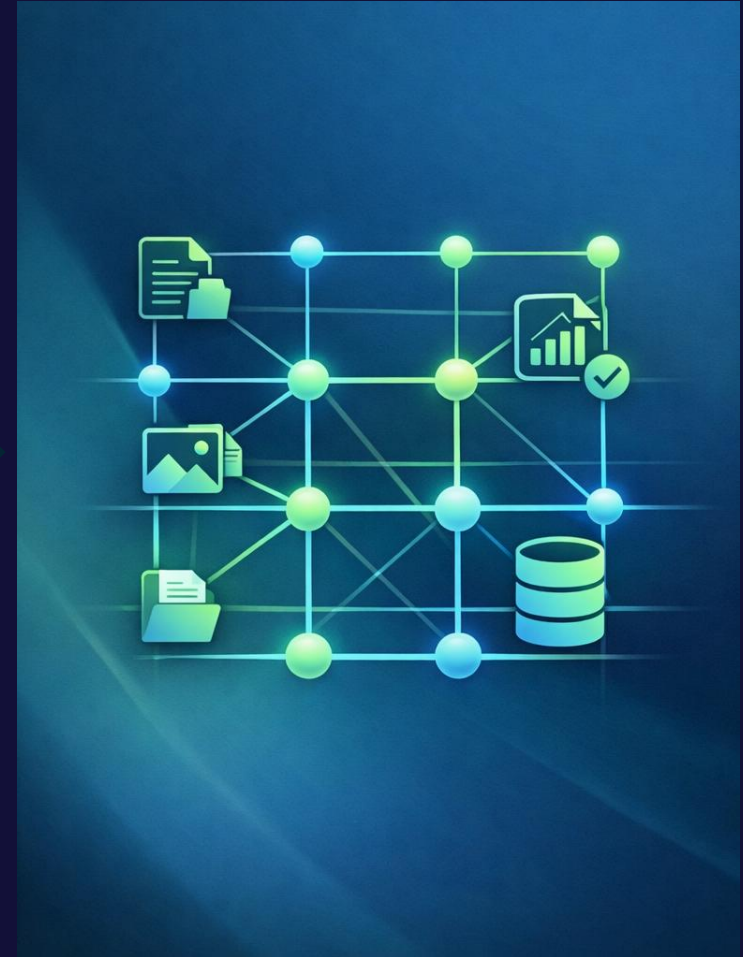
ATLANTA MARCH 16 - 20, 2026

Can we add
AI to this?



AI Functions

One-line transformations



Powering Data with AI Functions in Fabric



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AI Products
Microsoft Fabric



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Microsoft Fabric

Agenda

Overview

- AI Functions overview (pandas & PySpark)
- Business value & common use cases

Integrations across Fabric

- Dataflow Gen2
- Data Warehouse (SQL)
- Data Wrangler

Multimodal input support

- Images, PDFs, text files

Experience enhancements

- Improved cost transparency
- Eval & starter notebooks

Real world use case

- How a Fortune 500 saved 1,000+ hrs. with AI Functions

What are AI Functions?

1-Liners that perform high level intelligence tasks
by applying LLMs to your rows of data

text
It was the best of times,
Call me Ishmael....
All happy families are alike; ...



```
df.ai.summarize()
```

summary
The novel explores the struggles...
A sailor recounts his voyage....
The novel delves into the complexities of love...

Specialized AI Function	Description
<code>ai.analyze_sentiment</code>	Identify emotions and intent
<code>ai.classify</code>	Classification into categories
<code>ai.extract</code>	Entity or substring extraction from data
<code>ai.fix_grammar</code>	Improve coherency, grammar, and spellings
<code>ai.similarity</code>	Compute cosine-similarity between text embeddings
<code>ai.summarize</code>	Customizable summary
<code>ai.translate</code>	Translation into any major language
General AI Function	Description
<code>ai.embed</code>	Generate vector embeddings for text
<code>ai.generate_response</code>	Do anything with custom prompt + structured output

Key Benefits

- ⚡ **Single line of code**
- ⚙️ **No API setup** — no keys, endpoints, or configuration
- 🔄 **High concurrency:** process multiple rows in parallel
- 🔒 **Row level isolation:** Context between rows is not mixed
- 🌐 **Flexible model choice:** not locked into one model

Use Cases

- 🖌️ **Data cleanup at scale**
- 🔍 **Extracting intelligent insights** from large datasets
- 📄 **Complex contract analysis**
- 📊 **Build intelligent dashboards** from predictable and structured AI functions output
- 🧪 **AI functions to evaluate AI functions:** LLM as a judge

Impact

- 🚀 “We transformed a **1,000+ hour manual and error-prone process to only 1 week** and with **100% consistency**”
- ⌚ “Before, this would take us **2 days**. Now at most it takes **10 minutes**”
- 🎯 “**ai.extract** makes parsing really easy and allows our data analysts to own it end to end”

AI Functions Demo: Text Transformation with Pandas

Generally Available

The screenshot displays the Microsoft Fabric workspace interface. At the top, there are tabs for 'Review_Analysis' and 'Global_Hotel_Reviews'. The main workspace area contains two code cells:

```
1 # The pandas AI functions package requires OpenAI version 1.99.5 or later
2 %pip install -q --force-reinstall openai==1.99.5 2>/dev/null
```

Cell [4] execution log: *Output is hidden*

```
1 # Required imports
2 import synapse.ml.aifunc as aifunc
3 import pandas as pd
```

Cell [5] execution log: Command executed in 2 sec 159 ms by Virginia Roman on 9:57:50 PM, 10/27/25

The interface includes a left sidebar with navigation options like Home, Workspaces, Copilot, OneLake catalog, Monitor, Real-Time, and Workloads. The bottom status bar shows 'Session ready', 'AutoSave: On', and 'Copilot completions: On'.

The screenshot shows the Microsoft Fabric Notebook UI. At the top, there's a navigation bar with 'Microsoft Fabric', 'Review_Analysis', and 'Confidential\Internal Only'. Below that is a search bar and various utility icons. The main interface has a left sidebar with 'Home', 'Workspaces', 'Copilot', 'OneLake catalog', 'Monitor', 'Real-Time', 'Workloads', 'HotelReview 5', and 'My workspace'. The central area contains a code cell with the following Python code:

```
1 reviews = pd.read_csv("/lakehouse/default/Files/Global Hotel Reviews.csv")
2 display(reviews)
```

Below the code, a status bar indicates: [10] ✓ 1 sec - Command executed in 1 sec 375 ms by Virginia Roman on 3/19/2026, 6:03:04 AM. Below that is a 'Log' section. The main content area displays a 'Table view' of the data. The table has 3 columns: '12L Review_ID', 'ABC Customer_Name', and 'ABC Review_Text'. The table contains 17 rows of data. At the bottom of the interface, there's a status bar with 'Session ready', 'AutoSave: On', 'Copilot completions: On', and 'Selected Cell 3 of 3 cells'.

12L Review_ID	ABC Customer_Name	ABC Review_Text
1	Emily R.	nice hotel expensive parking got good deal stay hotel anniversary in Sea...
2	Javier M.	Está bien, nada especial. Soy miembro Diamond de Hilton, pero decidí p...
3	Sofia L.	Quartos agradáveis, mas não uma experiência 4 estrelas — o Hotel Silve...
4	Antoine D.	Unique, excellent séjour, moment merveilleux à l'hôtel Silver Pines à Tok...
5	Linnea S.	Fantastisk vistelse, verkligen fantastisk! Vi gick på en Seahawks-match – ...
6	Michael K.	love Silver Pines staff husband stayed hotel crazy weekend attending m...
7	Li W.	在这座多雨的城市里度过了温馨的假期。我和丈夫于 2008 年 1 月初在...
8	Sarah T.	excellent staff, housekeeping quality hotel chocked staff make feel hom...
9	Aarav P.	होटल में रहा होटल सिल्वर पाइन्स कूज़, कमरे विशाल और अनोखे तरीके से सजाए ग...
10	Carmen F.	Excelente estancia en el Hotel Silver Pines el pasado fin de semana en R...
11	David H.	poor value stayed Silver Pines Washington, D.C. july, nice hotel priced 10...
12	Katarzyna B.	Dobra wartość w Seattle – zatrzymaliśmy się na 4 noce pod koniec 2007 ...
13	Ivan K.	Хороший отель с удобным расположением в Нью-Йорке, дизайн Ки...
14	Jessica C.	nice hotel not nice staff hotel lovely staff quite rude, bellhop desk clerk ...
15	Marco R.	Ottimo hotel per una notte durante un rapido viaggio di lavoro a Madri...
16	Brian J.	horrible customer service hotel stay february 3rd 4th 2007. my friend pic...
17	Laura M.	disappointed stay hotel Silver Pines in Barcelona based reviews seen Trip...

AI Functions in Data Wrangler

Public Preview

The screenshot displays the Microsoft Fabric Data Wrangler interface. The top navigation bar includes the Microsoft logo, the Fabric workspace name 'Bank Statements', and a search bar. The main workspace area shows two code cells. The first cell, labeled [4], contains a command to install OpenAI: `%pip install -q --force-reinstall openai==1.97.0 2>/dev/null`. The execution status is '24 sec - Command executed in 23 sec 961 ms by Virginia Roman on 9:27:29 AM, 9/03/25'. The second cell, labeled [5], contains Python code for required imports: `# Required imports`, `import synapse.ml.aifunc as aifunc`, `import pandas as pd`, and `import openai`. The execution status is '5 sec - Command executed in 1 sec 561 ms by Virginia Roman on 9:27:35 AM, 9/03/25'. The interface also features a left-hand Explorer sidebar with icons for Home, Workspaces, Copilot, OneLake catalog, Monitor, Real-Time, Workloads, and WealthManagement. The bottom status bar indicates 'Session ready', 'AutoSave: On', and 'Copilot completions: On'.

Broader Fabric Integration



The screenshot shows a SQL editor interface. At the top, there is a toolbar with several icons and labels: a play button for 'Run', a floppy disk for 'Save as', a folder for 'Save as view', a document for 'Copy query', a lightning bolt for 'Create rule', a document with a plus sign for 'Explain query', and a document with a checkmark for 'Fix query errors'. Below the toolbar, there is a text area with a light gray background. The text in the area is: '1 | Start writing T-SQL and Copilot will suggest what comes next. Accept with Tab or keep typing to change. Right click on editor to view command palette.' A vertical cursor is positioned at the beginning of the text. In the center of the text area, there is a large, faint letter 'I'.

The screenshot shows the Microsoft Fabric Dataflow Gen2 interface. At the top, there's a search bar and navigation icons. The main area displays a Power Query editor with a table of transaction data. The table has columns for 'DateTime', 'Description', and 'Amount'. The data includes various transactions such as Safeway, Swedish Medical Center, Serenity Spa, Netflix.com, Alaska Airlines, Allstate Home Insurance, Spotify, Shell Gas, AMC Pacific Place, Ballard Apartments Rent, Puget Sound Energy, Hulu.com, Emerald City Yoga, Hot Stove Society Cooking Class, Trader Joe's U-District, Lyft Ride Seattle, and Chipotle 12th Ave.

Queries [1] `Table.TransformColumnTypes(#"Removed top rows", {{"DateTime", type datetime}, {"Description", type text}, {"Amount", type number}})`

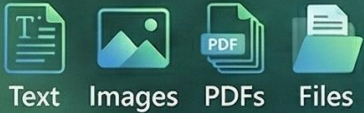
	DateTime	Description	Amount
1	8/1/2025, 10:03:00 PM	Safeway #1032 SEATTLE	266.47
2	8/2/2025, 10:38:00 AM	Swedish Medical Center	265.78
3	8/5/2025, 3:14:00 PM	Serenity Spa	300.98
4	8/6/2025, 10:10:00 AM	Netflix.com	20.79
5	8/6/2025, 7:08:00 PM	Alaska Airlines	901.38
6	8/10/2025, 3:53:00 AM	Allstate Home Insurance	83.24
7	8/13/2025, 9:39:00 AM	Spotify	15.26
8	8/14/2025, 3:06:00 AM	Shell Gas #39485	2050.75
9	8/15/2025, 6:26:00 PM	AMC Pacific Place	30.45
10	8/15/2025, 10:35:00 PM	Ballard Apartments Rent	2100
11	8/17/2025, 3:58:00 PM	Puget Sound Energy	286.85
12	8/22/2025, 3:38:00 AM	Hulu.com	18.99
13	8/22/2025, 5:49:00 AM	Emerald City Yoga	115.11
14	8/27/2025, 1:46:00 PM	Hot Stove Society Cooking Class	60.55
15	8/24/2025, 8:40:00 PM	Trader Joe's U-District	168.16
16	8/30/2025, 10:40:00 AM	Lyft Ride Seattle	60.58
17	8/30/2025, 9:04:00 PM	Chipotle 12th Ave	10.36

Table cell details
8/1/2025, 10:03:00 PM



Microsoft Fabric

Pandas DataFrame



PySpark DataFrame



Multimodal AI functions



LLM Transformation

LLM Transformed Text



Extracted Insights



Summarized Documents



Structured Data



The screenshot shows the Microsoft Fabric IDE interface. At the top, there's a navigation bar with 'Home', 'Edit', 'AI tools', 'Run', and 'View'. Below this is a toolbar with 'AutoSave' (On), undo, redo, copy, paste, delete, and other actions. The left sidebar contains a navigation pane with 'Data items', 'Resources', 'Connections', and 'OneLake'. Under 'OneLake', there's a 'Multimodal' folder containing subfolders for 'Tables', 'Files', 'contracts', 'earnings_reports', 'insurance_claims', 'invoices', and 'product_reviews'. The main workspace displays a notebook titled 'Multimodal AI Functions' with a note that '23 cells hidden'. The bottom status bar shows 'Session ready', 'AutoSave: On', 'Copilot completions: On', and 'Selected Cell 1 of 24 cells'.

Experience Enhancements

Knobs & Levers

Parameter	Description	Default
concurrency	Number of parallel LLM calls	200
progress_bar_mode	Details in pandas TQDM progress bar	basic
Model Parameters	Description	
embedding_deployment_name	Generate vector embeddings for text	text-embedding-ada-002
model_deployment_name	Do anything with custom prompt + structured output	gpt-4.1-mini
reasoning_effort	Reasoning effort to be used	None
temperature	Randomness of output	1.0
top_p	Restruct model token probability space	None
verbosity	Controls output length	None

Configure LLM

- Change Models: Bigger LLMs generally perform better in diverse scenarios

```
aifunc.default_conf.model_deployment_name = "gpt-5"
```



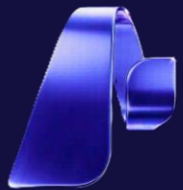
Fabric LLMs for AI Functions

- gpt-4.1-mini (default)
- gpt-4.1
- gpt-5

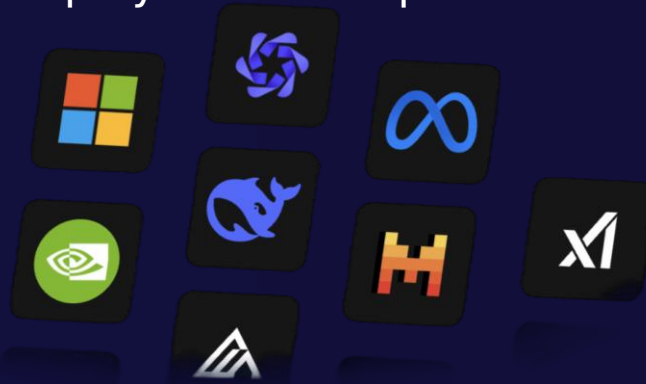
Upcoming Fabric LLMs options

- gpt-5-mini (new default end of April 2026)
- gpt-5.1 and beyond

- BYO: Bring Your LLM deployments compatible with `responses` or `chat_completions` API



Microsoft Foundry



Cost Transparency

- Real Time Token Usage and CU Prediction in pandas tqdm Progress Bar:

```
aifunc.default_conf.progress_bar_mode = "stats"
```

```
1 aifunc.default_conf.progress_bar_mode = "stats"
2 df["summary"] = df.ai.summarize()
```

PySpark (Python) ▾

Cost Transparency

- Real Time Token Usage and CU Prediction in pandas tqdm Progress Bar:

```
aifunc.default_conf.progress_bar_mode = "stats"
```

- Post AI Function detailed stats with `ai.stats`

```
1 aifunc.default_conf.progress_bar_mode = "stats"
2 df["summary"] = df.ai.summarize()
```

✓ 48 sec - Command executed in 47 sec 970 ms by Rana Singh on 3/17/2026, 4:27:09 AM

ai.summarize: 100%|██████████| 1000/1000 [00:43<00:00, 22.85it/s, cached=512.00k, in=878.00k, out=268.83k, CU-h=31.50]

```
1 display(df.ai.stats)
```

✓ 1 sec - Command executed in 1 sec 331 ms by Rana Singh on 3/17/2026, 4:27:22 AM

12L num_successful	12L num_exceptions	12L num_unevaluated	12L num_harmful	12L cached_tokens	12L input_tokens	12L output_tokens	ABC client_type	ABC input_types	ABC model
1000	0	0	0	512000	878000	268830	fabric_llm_end...	{"text":1000}	gpt-5

- Coming soon: tiktoken based input token and cost calculator

Cost Transparency: Progress Bar Modes

Visual Comparison

Set `aifunc.default_conf.progress_bar_mode` to one of the following:

"basic" (default) — Clean progress tracking

```
ai.extract: 100%|██████████| 1000/1000 [00:10<00:00, 22.1it/s]
```

"stats" — Full metrics with token counts and CU prediction estimates

```
ai.extract: 67%|███████████| 670/1000 [00:06<00:04, 22.1it/s, cached=150.03k->250.50k, in=800.82k->1.21M, out=68.65K->101.06k, CU-h=3.60->5.33]
```

~~~~~  
token stats + CU prediction estimates

```
ai.extract: 100%|██████████| 1000/1000 [00:10<00:00, 22.1it/s, cached=305.80k, in=1.21M, out=101.06k, CU-h=5.17]
```

~~~~~  
final values (no arrows)

"disable" — No output

(nothing displayed)

Cost Transparency: New Operation Name

Before

- AI Functions usage was bundled into other operations such as Spark or Data Warehouse CU
- Hard to isolate or track AI-specific costs

Change

- New dedicated “AI Functions” operation name
- Usage tracked separately in billing in Microsoft Fabric Capacity Metrics app

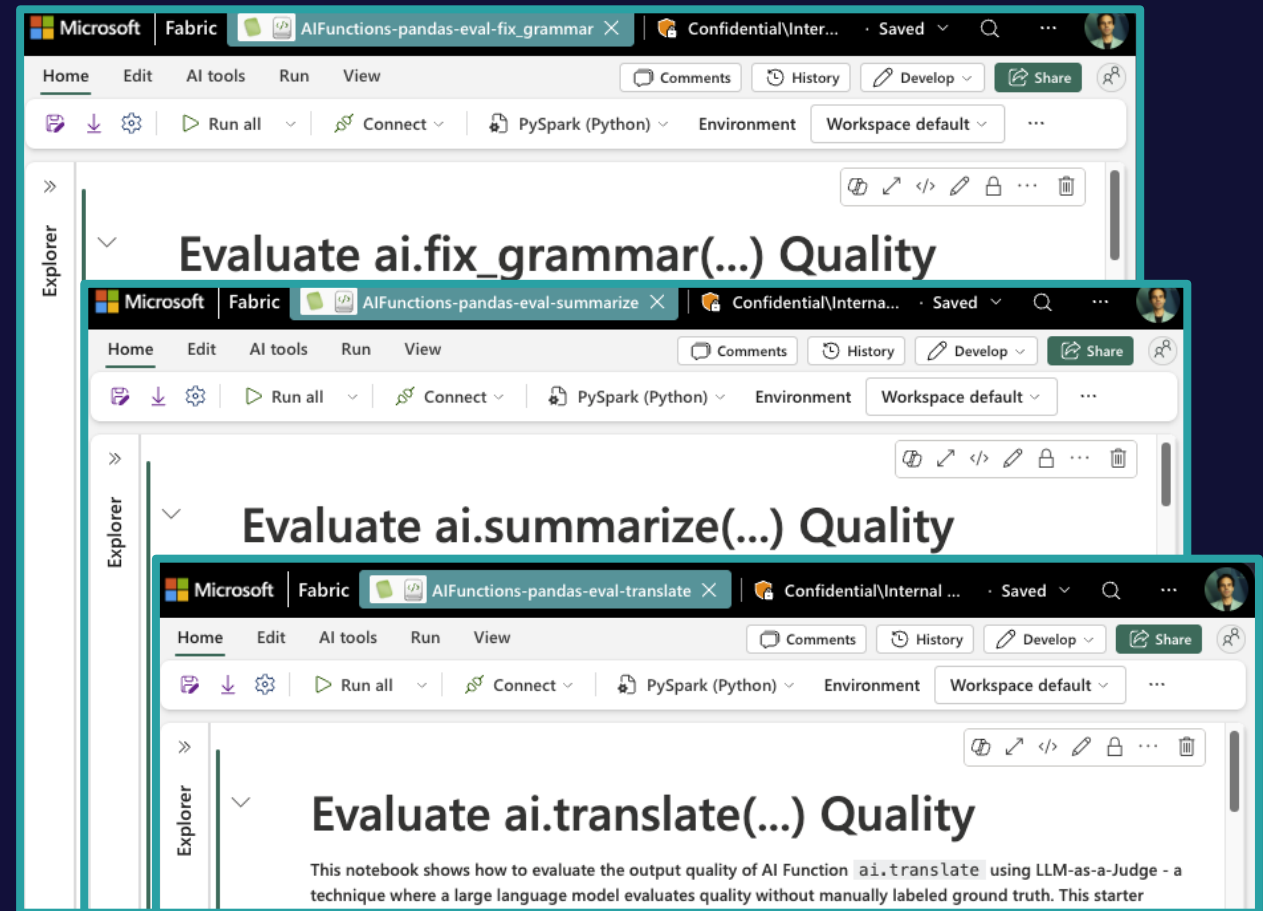
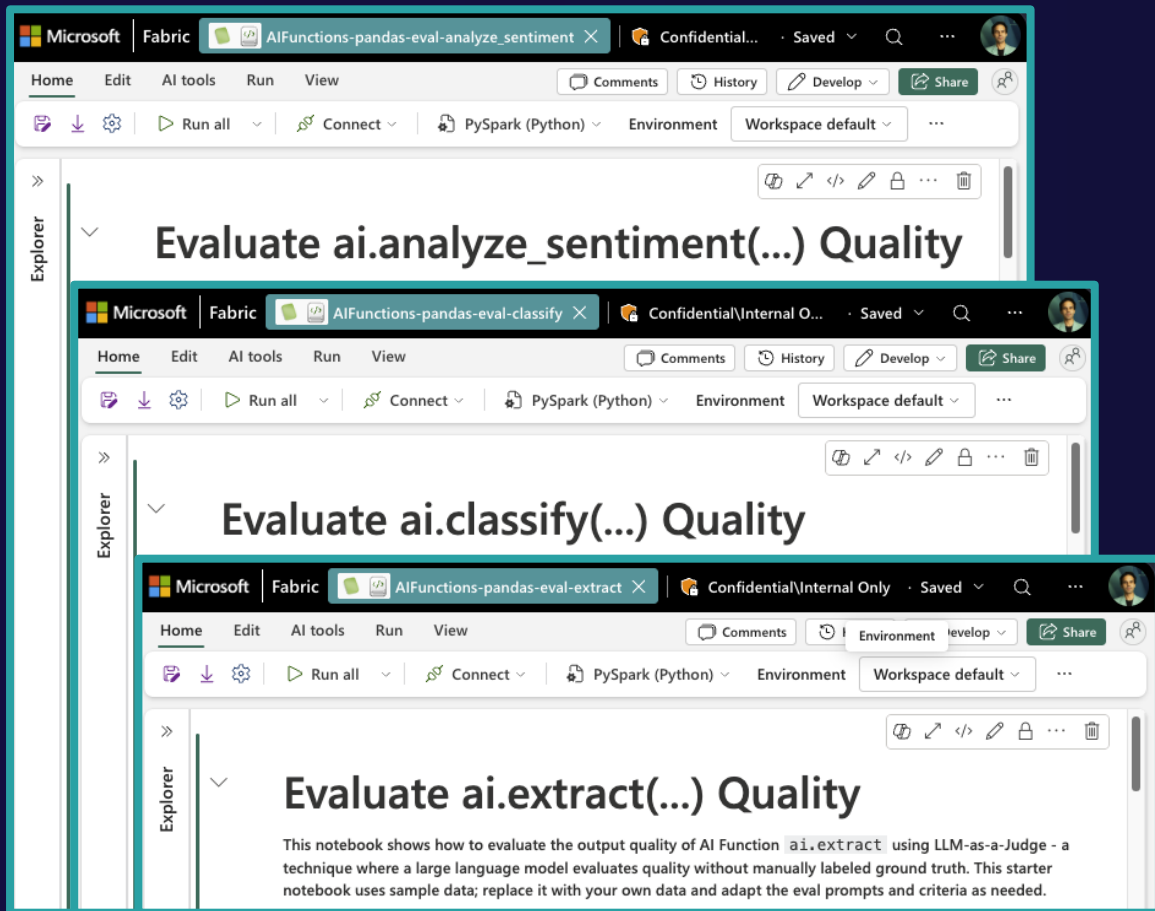
Impact

- Clear visibility into AI Functions usage
- Easier cost management & reporting
- Understand usage patterns of AI Functions

Eval Notebooks

Dogfood AI Functions in LLM-as-judge workflows to evaluate performance of specialized AI Functions on your data + tips to make AI Functions work better for your use case

aka.ms/fabric-aifunctions-eval-notebooks



Starter Notebooks

Ready to play AI Functions powered data analytics workflows in pandas or PySpark

aka.ms/fabric-aifunctions-starter-notebooks

The screenshot shows the Microsoft Fabric web interface for the 'AIFunctions-pandas-starter-notebook'. The page title is 'Pandas AI Functions Starter Notebook'. Below the title, it says 'Learn to use pandas AI Functions by building a transformation workflow on a customer-review dataset.' The 'What You'll Do' section lists four steps: 1. Set shared default configurations. 2. Load a public review sample and inspect rating and review-length patterns before enrichment. 3. Walk through all nine Fabric AI Functions for data enrichment in one customer-feedback workflow. 4. Build a compact dashboard and review common pandas configuration options. The 'Before You Start' section lists three items: Runtime: Fabric Runtime 1.3 or later. Temporary dependency: Pandas AI Functions currently require the openai Python package in the notebook session. Cost control: Start with a small number of SAMPLE_ROWS, then scale up after you are happy with output quality. At the bottom, there is a table with two columns: Resource and Link.

Resource	Link
AI Functions overview	aka.ms/ai-functions
Pandas configuration docs	Pandas AI Function Config Doc
Model catalog	aka.ms/fabric-ai-models
More starter notebook examples	aka.ms/fabric-aifunctions-starter-notebooks
More eval notebook examples	aka.ms/fabric-aifunctions-eval-notebooks

The screenshot shows the Microsoft Fabric web interface for the 'AIFunctions-PySpark-starter-notebook'. The page title is 'PySpark AI Functions Starter Notebook'. Below the title, it says 'Learn to use PySpark AI Functions by building a transformation workflow on a customer-review dataset.' The 'What You'll Do' section lists four steps: 1. Set shared default configurations. 2. Load a public review sample and inspect rating and review-length patterns before enrichment. 3. Walk through all nine Fabric AI Functions on a Spark DataFrame. 4. Build a compact dashboard and review common PySpark configuration options. The 'Before You Start' section lists two items: Runtime: Fabric Runtime 1.3 or later. Cost control: Start with a small number of SAMPLE_ROWS, then scale up after you are happy with output quality. At the bottom, there is a table with two columns: Resource and Link.

Resource	Link
AI Functions overview	aka.ms/ai-functions
PySpark configuration docs	PySpark AI Function Config Doc
Model catalog	aka.ms/fabric-ai-models
More starter notebook examples	aka.ms/fabric-aifunctions-starter-notebooks
More eval notebook examples	aka.ms/fabric-aifunctions-eval-notebooks

How a Fortune 500 Saved 1,000+ hrs. with AI Functions

How a Fortune 500 Automated Reporting with AI Functions

Problem

- 📊 **1,000+ active initiatives** across the portfolio
- 🕒 Monthly status reporting was **manual and time-consuming**
- 🔍 Leaders lacked clear, consistent, up-to-date **business value visibility**
- 🚦 Traditional reports focused on **status, not outcomes**

AI Functions Usage

- 🤖 Used `ai.generate_response()` on JIRA portfolio data
- 🧠 **Analyzed text fields** across projects within each initiative
- 📄 Generated **executive-ready value summaries** automatically
- 🎯 Tuned prompts to reflect **company-specific language and criteria**

Impact

- ✅ **~75% of monthly status reporting automated**
- ⌚ **Thousands of hours saved** across initiative managers
- 📈 **Consistent, scalable visibility** into portfolio value
- 💡 Leaders can prioritize based on **business impact, not manual updates**

Resources

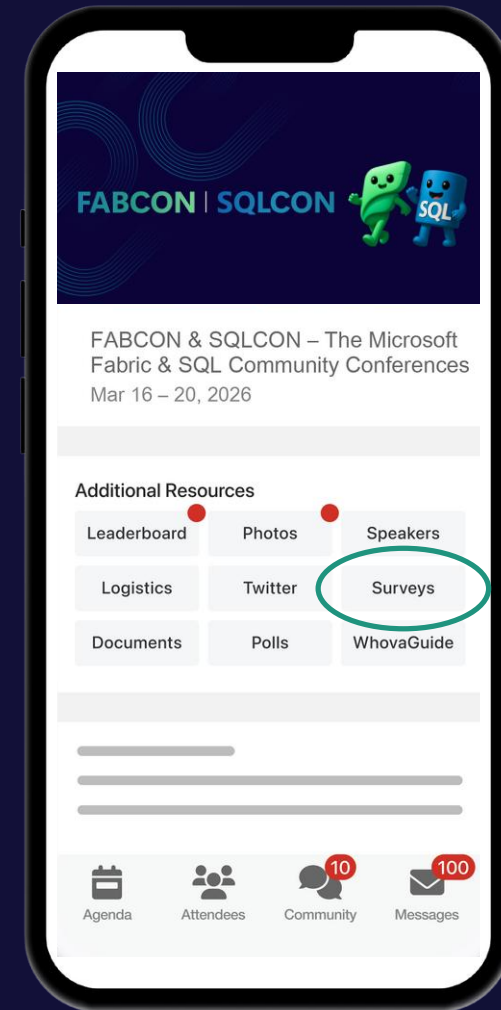
- Documentation: aka.ms/ai-functions
- AI Functions Starter Notebooks: aka.ms/fabric-aifunctions-starter-notebooks
- AI Functions Eval Notebooks: aka.ms/fabric-aifunctions-eval-notebooks
- Suggest ideas on the Fabric Ideas forum: ideas.fabric.microsoft.com

Q&A

How was the session?



Complete Session Surveys in
Whova for your chance to WIN
PRIZES!



Sound off.
The mic is all yours.
Influence the product roadmap.

Join the Fabric User Panel



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Join the SQL User Panel



Influence our SQL roadmap and ensure it meets your real-life needs

<https://aka.ms/JoinSQLUserPanel>

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