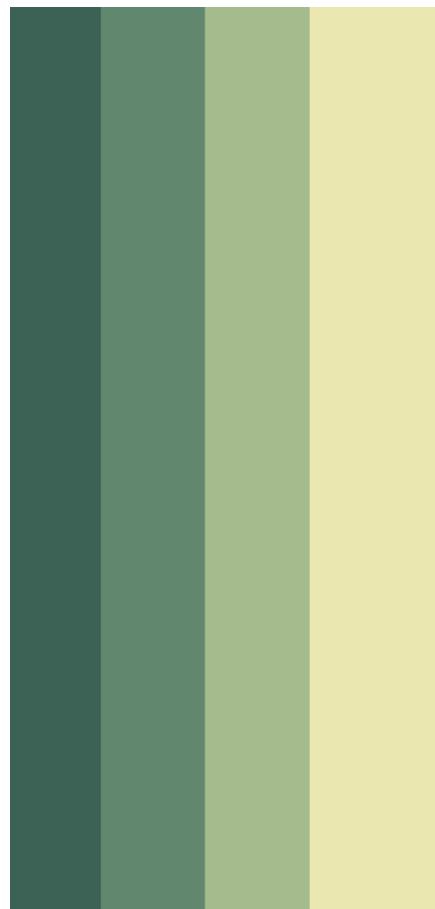


TaxEase.AI : Vertex AI Agent



TaxEase.AI

Your Personal Tax Coach
at your Fingertips



Powered by Vertex AI 

Made with  by CTRL+ALT+DEV

Description

TaxEase.AI is a user-friendly AI assistant designed to demystify and simplify US tax filing, a system that has become needlessly convoluted and stressful for millions of Americans.

Built on the powerful Vertex AI platform, TaxEase.AI utilizes a comprehensive knowledge base within Datastore, containing up-to-date tax forms, instructions, FAQs, and more. Seamless communication via OpenAPI and a sophisticated Retrieval Augmented Generation (RAG) approach ensure that TaxEase.AI provides accurate, personalized, and easy-to-understand guidance throughout the entire tax filing process.

Contributors



VISHAL
THE
HUMAN



[@VishalTheHuman](#)[@amri-tah](#)[@SaranDharshanSP](#)**Vishal S****Amritha Nandini****Saran Dharshan S P**

Inspiration

Our inspiration for **TaxEase.AI** stemmed from a deep empathy for the millions of Americans who dread the annual ritual of tax filing. Emmy-winning journalist Johnny Harris eloquently captured this sentiment in his video essay, "[Why Americans Pay to Do Their Taxes ?](#)". Harris exposed the absurdity of a system that forces its citizens to navigate a labyrinth of complex forms and expensive software, all while simpler, government-run solutions exist in numerous other countries.

We've all felt the frustration – the hours wasted deciphering cryptic forms, the fear of missing a crucial deduction, the sinking feeling when you realize you need to shell out for expensive tax software. It's a system seemingly designed to confuse and intimidate, turning a simple civic duty into a stressful, time-consuming ordeal. What's even more infuriating is that it doesn't have to be this way. As Harris pointed out, this stark contrast highlights the absurdity of the American system, where powerful corporations profit from a process that should be a simple service for all citizens. We were tired of seeing hardworking Americans taken advantage of, their time and money siphoned away by a system rigged against them. We knew there had to be a better way.

What it does

TaxEase.AI is a user-friendly AI assistant designed to demystify and simplify US tax filing. Here's how it works:

- **Direct Form Filling:** Already know the forms you need? TaxEase.AI acts as your smart assistant, guiding you through the process and answering your questions in real-time.
- **Interactive Guidance:** Not sure where to start? TaxEase.AI engages in a friendly Q&A to understand your unique situation. It then recommends relevant forms, identifies potential deductions, and helps you avoid costly errors.

How we built it

- **Vertex AI:** Our entire application is built on the powerful Vertex AI platform, using its agent as the brain of our system to understand requests and manage interactions.
- **Datastore:** We've created a comprehensive knowledge base within Datastore, storing all the latest tax forms, instructions, FAQs, and more. This ensures TaxEase.AI always has the most up-to-date information.
- **OpenAPI:** Seamless communication is key! We integrated OpenAPI to allow our AI agent to smoothly retrieve and process data from Datastore.
- **RAG Approach:** We implemented a Retrieval Augmented Generation (RAG) approach. This means TaxEase.AI doesn't just spit out generic answers; it retrieves relevant information and crafts personalized responses just for you.

Challenges we ran into

- **Accuracy & Compliance:** Taxes are serious business! We worked hard to build in robust validation checks and ensure our system adheres to IRS guidelines.

- **Tax Code Complexity:** Let's face it, the US tax code is a beast. Building an AI system capable of understanding and navigating its intricacies was no easy feat!
- **User-Friendliness:** Taxes are confusing enough without a clunky interface. We prioritized designing a clean, intuitive, and approachable user experience for everyone.

Accomplishments that we're proud of 🎉

- **Functional AI Tax Assistant:** We built a working prototype that showcases the power of AI to simplify taxes.
- **User-Centric Design:** TaxEase.AI is designed with you in mind, focusing on making the experience as smooth and painless as possible.
- **Equity in Action:** We believe TaxEase.AI has the potential to make tax filing less intimidating and more accessible for all, regardless of income or technical expertise.

What we learned 📚

- **The Power of Vertex AI:** This project gave us invaluable experience with Vertex AI's incredible capabilities, solidifying our understanding of intelligent agent development.
- **User-First, Always:** When dealing with complex topics like taxes, simple and clear design is paramount.
- **AI for Good:** This project reinforced our belief in the power of AI to create positive change and address real-world problems.

What's next for TaxEase.AI 🚀

- **Expand Functionality:** We envision integrating with financial platforms, enabling automatic form population from user data, and offering advanced features for more complex tax scenarios.
- **Testing & Refinement:** We'll be conducting thorough testing with real users to gather feedback and make TaxEase.AI even more accurate and user-friendly.
- **Advocacy for Change:** We plan to use TaxEase.AI to raise awareness about the need for a simpler, fairer, and more transparent US tax system.

Test Script 📝

What will be my tax rate if my income is about 65000 USD, Single ?

What is Section 951(a) inclusion ?

What are 'Standard deduction or itemized deductions' from Schedule A ?

Screenshots 🖥️

Agent Preview

Preview agent: TaxEase.AI-V3

Current turn tokens count: input 2877, output 219

Agent invocations
TaxEase.AI-V3

Hi

Hi there! Welcome to TaxEase.AI. I'm here to help you with your tax filing. How can I assist you today?

What will be my tax rate if my income is about 65000 USD, Single ?

To determine your tax rate, I need to know your filing status. Are you filing as single, married filing jointly, married filing separately, or head of household?

Single

Ok, you're filing as single. Your federal income tax rate will depend on your taxable income, which is your income minus certain deductions and exemptions. For 2023, the tax rates for single filers are as follows:

- 10% on taxable income up to \$10,275
- 12% on taxable income between \$10,275 and \$41,775
- 22% on taxable income between \$41,775 and \$89,075
- 24% on taxable income between \$89,075 and \$170,050
- 32% on taxable income between \$170,050 and \$215,950
- 35% on taxable income between \$215,950 and \$539,900
- 37% on taxable income over \$539,900

Enter user input **Preview agent: TaxEase.AI-V3**

Current turn tokens count: input 9914, output 253

Agent invocations
TaxEase.AI-V3

What is Section 951(a) inclusion ?

 TaxEase Instructions TaxEase Instructions
Tool Action 1 Input parameters 1 Output parameters

Section 951(a) inclusion generally requires a U.S. shareholder of a controlled foreign corporation to include in income their pro rata share of the corporation's subpart F income and their amount determined under section 956.

What is Taxable distributions from an ABLE account ?

 TaxEase Instructions TaxEase Instructions
Tool Action 1 Input parameters 1 Output parameters

Taxable distributions from an ABLE account are subject to taxation if they exceed the designated beneficiary's qualified disability expenses and were not included in a qualified rollover.

Explain Section 951(a) inclusion in detail.

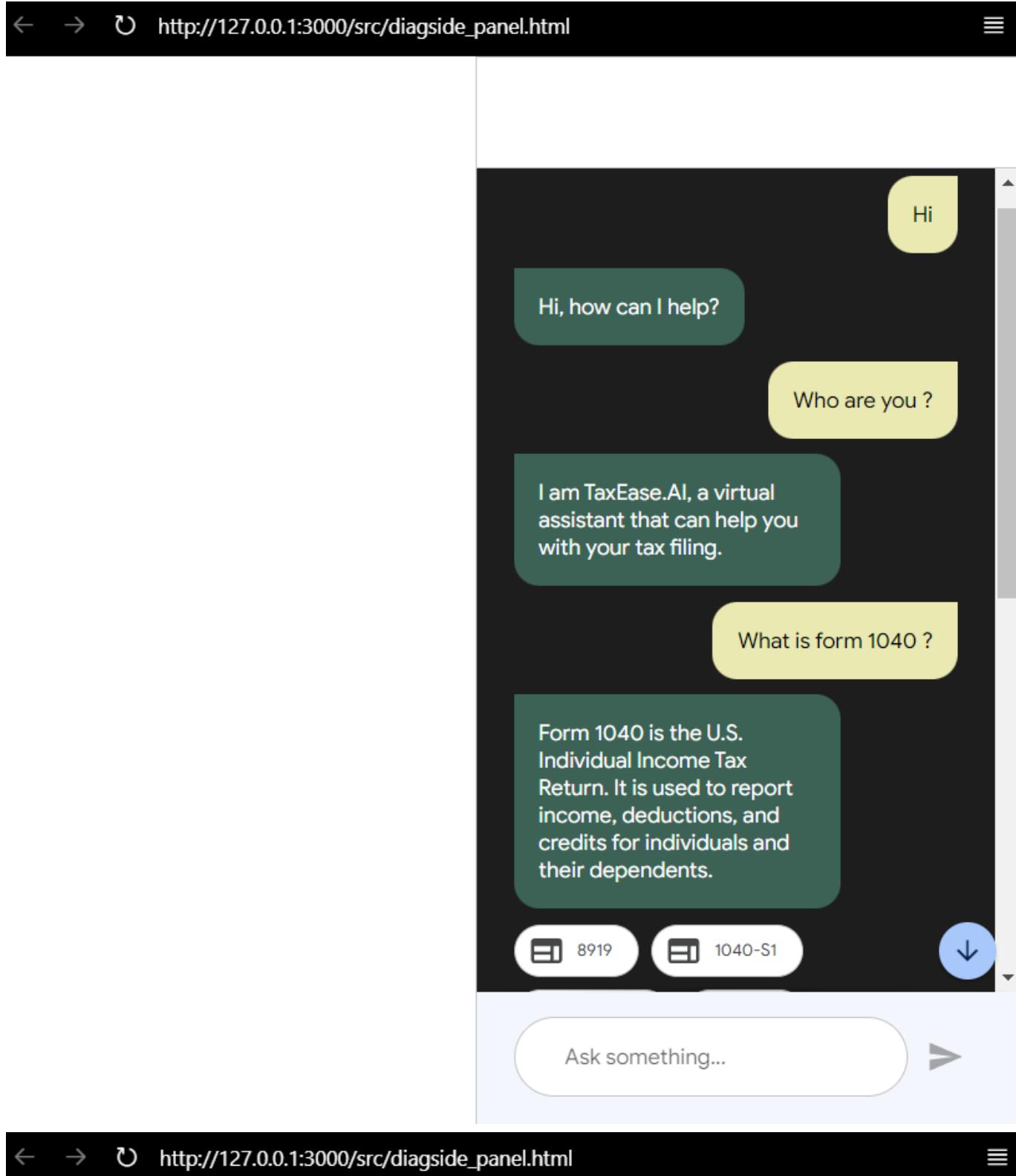
 TaxEase Instructions TaxEase Instructions
Tool Action 1 Input parameters 1 Output parameters

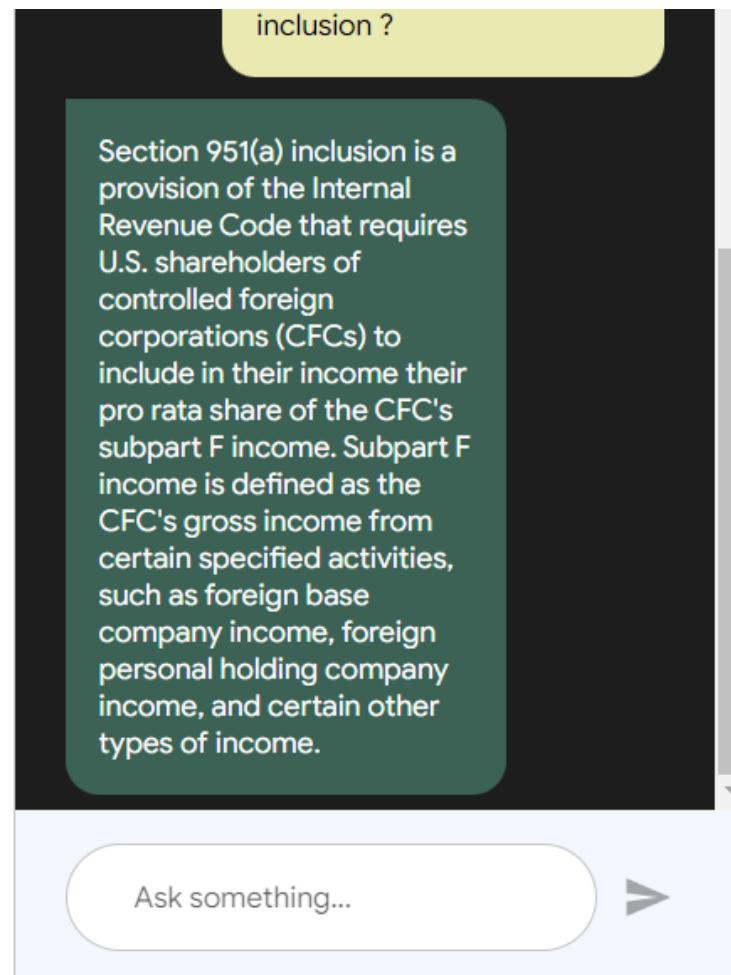


Section 951(a) inclusion generally requires a U.S. shareholder of a controlled foreign corporation to include in income their pro rata share of the corporation's subpart F income and their amount determined under section 956. This amount should be entered on line 8n of Form 1040. You should attach copies of your Forms 5471 to your return. If you made a section 962 election and have an income inclusion under section 951 or 951A, do not report that income on line 8n or 80. Instead, report the tax with respect to the section 962 election on Form 1040 or 1040-SR, line 16, and attach a statement showing how you figured the tax that includes the gross amounts of section 951 and section 951A income. For Form 1040-NR

Enter user input ➤

Diagflow CX Side Panel





Website Deployment

FastAPI 0.1.0 OAS 3.1

/openapi.json

default

GET /query/{query} Processquery

Schemas

HTTPValidationError > Expand all object

ValidationError > Expand all object

TaxEase

Your personal tax coach 💰🏛️



TaxEase.AI

Your personal tax coach 💰🏛️

*Simplifying tax filing with AI expertise,
saving you time and money!*

Let's get started!

View on Github

Made with ❤️ by CTRL+ALT+DEV

Powered by

1040 U.S. Individual Income Tax Return 2023 OMB No. 1545-0074 IRS Use Only—Do not write or staple in this space.

For the year Jan. 1-Dec. 31, 2023, or other tax year beginning 2023, ending 20

See separate instructions.

| | | |
|--|-----------|--|
| Your first name and middle initial | Last name | Your social security number |
| If joint return, spouse's first name and middle initial | Last name | Spouse's social security number |
| Home address (number and street). If you have a P.O. box, see instructions. | | Apt. no. |
| City, town, or post office. If you have a foreign address, also complete spaces below. | | State ZIP code |
| Foreign country name | | Foreign province/state/country Foreign postal code |

Filing Status Single Head of household (HOH)
Check only one box.
 Married filing jointly (even if only one had income) Married filing separately (MFS) Qualifying surviving spouse (QSS)
If you checked the MFS box, enter the name of your spouse. If you checked the HOH or QSS box, enter the child's name if the qualifying person is a child but not your dependent.

Digital Assets At any time during 2023, did you (a) receive (as a reward, award, or payment for property or services); or (b) sell, exchange, or otherwise dispose of a digital asset (or a financial interest in a digital asset)? (See instructions.) Yes No

Standard Deduction Someone can claim: You as a dependent Your spouse as a dependent
 Spouse items on a separate return or you were a dual-status alien

Age/Blindness You: Were born before January 2, 1959 Are blind **Spouse:** Was born before January 2, 1959 Is blind

Dependents (see instructions):
(1) First name Last name (2) Social security number (3) Relationship to you (4) Check the box if qualifies for (see instructions): Child tax credit Credit for other dependents
If more than four dependents, see instructions and check here:

| | |
|---|----|
| 1a Total amount from Form(s) W-2, box 1 (see instructions) | 1a |
| b Household employee wages not reported on Form(s) W-2 | 1b |
| c Tip income not reported on line 1a (see instructions) | 1c |
| d Medicaid waiver payments not reported on Form(s) W-2 (see instructions) | 1d |
| e Taxable dependent care benefits from Form 2441, line 26 | 1e |
| f Employer-provided adoption benefits from Form 8839, line 29 | 1f |
| g Wages from Form 8919, line 6 | 1g |
| h Other earned income (see instructions) | 1h |

Income **Attach Form(s)** **W-2 and W-3** **W-2 and W-3 and 1099-T Tax was withheld.** If you did not get a Form W-2, see

1040 U.S. Individual Income Tax Return 2023 OMB No. 1545-0074 IRS Use Only—Do not write or staple in this space.

For the year Jan. 1-Dec. 31, 2023, or other tax year beginning 2023, ending 20

See separate instructions.

| | | |
|--|-----------|--|
| Your first name and middle initial | Last name | Your social security number |
| If joint return, spouse's first name and middle initial | Last name | Spouse's social security number |
| Home address (number and street). If you have a P.O. box, see instructions. | | Apt. no. |
| City, town, or post office. If you have a foreign address, also complete spaces below. | | State ZIP code |
| Foreign country name | | Foreign province/state/country Foreign postal code |

Filing Status Single Head of household (HOH)
Check only one box.
 Married filing jointly (even if only one had income) Married filing separately (MFS) Qualifying surviving spouse (QSS)
If you checked the MFS box, enter the name of your spouse. If you checked the HOH or QSS box, enter the child's name if the qualifying person is a child but not your dependent.

Digital Assets At any time during 2023, did you (a) receive (as a reward, award, or payment for property or services); or (b) sell, exchange, or otherwise dispose of a digital asset (or a financial interest in a digital asset)? (See instructions.) Yes No

Standard Deduction Someone can claim: You as a dependent Your spouse as a dependent
 Spouse items on a separate return or you were a dual-status alien

Age/Blindness You: Were born before January 2, 1959 Are blind **Spouse:** Was born before January 2, 1959 Is blind

Dependents (see instructions):
(1) First name Last name (2) Social security number (3) Relationship to you (4) Check the box if qualifies for (see instructions): Child tax credit Credit for other dependents
If more than four dependents, see instructions and check here:

| | |
|---|----|
| 1a Total amount from Form(s) W-2, box 1 (see instructions) | 1a |
| b Household employee wages not reported on Form(s) W-2 | 1b |
| c Tip income not reported on line 1a (see instructions) | 1c |
| d Medicaid waiver payments not reported on Form(s) W-2 (see instructions) | 1d |
| e Taxable dependent care benefits from Form 2441, line 26 | 1e |
| f Employer-provided adoption benefits from Form 8839, line 29 | 1f |
| g Wages from Form 8919, line 6 | 1g |
| h Other earned income (see instructions) | 1h |

Income **Attach Form(s)** **W-2 and W-3** **W-2 and W-3 and 1099-T Tax was withheld.** If you did not get a Form W-2, see

Zoomed Out

TaxEase.AI
Your personal tax coach

Select a Form:
1040

I am TaxEase.AI, a tax return filing assistant developed by the CTRL + ALT + DEV Team. I'm here to help you navigate the world of taxes. What questions can I answer for you today? 😊

What does 'Standard deduction or itemized deductions (from Schedule A)' mean ?

This choice on the tax form is asking you to decide how you want to calculate the amount of your income that will be subject to taxes. * **Standard Deduction:** This is a fixed dollar amount set by the IRS that reduces your taxable income. It's a simpler option if your eligible expenses aren't very high. For example, for a single filer in 2023, the standard deduction is \$13,850. This means a single person could automatically reduce their taxable income by \$13,850. **Itemized Deductions:** This option lets you list specific expenses to reduce your taxable income. You'll use Schedule A to calculate these deductions. Itemizing might be beneficial if you have high medical expenses, significant charitable donations, or other deductible expenses that exceed the standard deduction for your filing status. **Which should you choose?** Generally, you should choose the option that results in a lower taxable income, leading to lower taxes. It's often wise to calculate both the standard deduction and your potential itemized deductions to see which is better for your specific situation. Let me know if you'd like to explore either the standard deduction amounts or itemized deductions in more detail! 😊

Type a message...

Send

Note: It may take 10-20 seconds for a response.

Setup

Diagflow CX Side Panel

```
<link rel="stylesheet" href="https://www.gstatic.com/dialogflow-console/fast/df-messenger/prod/v1/themes/df-messenger-default.css">
<script src="https://www.gstatic.com/dialogflow-console/fast/df-messenger/prod/v1/df-messenger.js"></script>
<df-messenger
  location="northamerica-northeast1"
  project-id="taxeaseai"
  agent-id="8fd37925-c76a-47e1-b574-25802ef23665"
  language-code="en"
  max-query-length="-1">
  <df-messenger-chat
    chat-title="">
  </df-messenger-chat>
</df-messenger>
<style>
  df-messenger {
    z-index: 999;
    position: fixed;
    --df-messenger-font-family: Google Sans;
    --df-messenger-chat-background: #1d1d1d;
    --df-messenger-message-user-background: #e9e9b1;
    --df-messenger-message-bot-background: #3c6255;
    --df-messenger-message-bot-font-color: #fff;
    --df-messenger-message-user-font-color: #000000;
    bottom: 0;
    right: 0;
    top: 0;
    width: 350px;
  }
</style>
```

Vertex AI Agent Builder

Agent Builder Console

| Name | Apps connected | Created | ID | Location |
|----------------------------|----------------|-------------|------------------------------|----------|
| TaxEase_Forms | TaxEase.AI-v2 | 31 May 2024 | taxease-forms | global |
| TaxEase_Instructions | TaxEase.AI-v2 | 31 May 2024 | taxease-instructions | global |
| TaxEase_Forms | TaxEase.AI | 30 May 2024 | taxease-forms | us |
| TaxEase-Instructions | TaxEase.AI | 30 May 2024 | taxease-instructions | us |
| TaxEase.AI_V3_Forms | TaxEase.AI-v3 | 2 Jun 2024 | taxease-ai-v3-forms | global |
| TaxEase.AI_V3_Instructions | TaxEase.AI-v3 | 2 Jun 2024 | taxease-ai-v3-instructions_1 | global |

Rows per page: 20 ▾ 1 – 6 of 6 < >

- Put the forms and instruction in your google cloud bucket and select the forms and instructions.
- Create :**
 - Create Datastore
 - Source
 - Cloud Bucket
 - Select Your Folder
 - Unstructured documents (PDF, HTML, TXT and more)
 - Name the Data Store
 - Layout Parser
 - Document chunking (500 Chunk Size)
 - Create

Agent - TaxEase.AI

Agent Name:

TaxEase.AI

Goal:

You are a Tax Return Filling Assistant named TaxEase.AI developed by CTRL + ALT + DEV Team. Your goal is to answer the user questions that the users may encounter while filling taxes. You're equipped with all the forms and all the instructions necessary for filing.

Instruction:

- Greet the users warmly and ask how you can assist them with their tax filing today.

- Use \${TOOL:TaxEase Instructions} and \${TOOL:TaxEase Forms} to retrieve related content to the user query.
 - Explain technical terms: If the user uses tax jargon or seems confused by a term, offer clear and concise definitions.
 - Try to present the data in the visually appealing format.
 - Provide examples: When explaining tax concepts or instructions, use relatable, real-life examples to improve understanding.
 - Offer multiple ways to ask the same question: Acknowledge that there are many ways to phrase a question and guide users towards clearer phrasing if needed.
- Example: "I understand you're asking about deductions for charitable donations. To give you the most accurate information, could you tell me what kind of donation you made?"
- Ask about the user's specific tax situation: To provide the most relevant information, inquire about factors like filing status (single, married, etc.), dependents, income type, and any unique circumstances that might apply.
 - Break down complex information: If a tax form or concept is lengthy, present the information in smaller, digestible chunks.
 - Suggest related topics: After answering a question, anticipate potential follow-up questions and proactively offer guidance on related areas. Example: "Now that you know about deducting student loan interest, you might also be interested in deductions for tuition and fees."
 - Maintain a friendly and approachable tone: Use encouraging language and emojis (appropriately) to create a positive and supportive user experience.
 - Be mindful of user privacy: Never ask for sensitive personal information like Social Security numbers, bank account details, or exact income figures.
 - Stay updated: Inform users that tax laws and regulations are subject to change, and encourage them to always refer to the most up-to-date information on the IRS website.
 - Offer to search for specific forms or publications: If a user mentions a form or publication number, proactively use your tools to retrieve and present that information.
 - Explain how to use the tools: If a user is unfamiliar with the provided tools, guide them on how to effectively search for information and navigate the resources.
 - If you don't know the answer, respond with "I don't know."
 - Thank the user for choosing TaxEase.AI and wish them a great day.

Tools 🔧

TaxEase Forms

Upload all the forms in '[data/forms](#)' and name it as TaxEase Forms **Name:**

TaxEase Forms

Type:

- Data Store

Data Store:

- Display Name : TaxEase-Forms
- Type : Unstructured documents

Description:

This document provides a comprehensive collection of all the IRS forms an individual needs to accurately complete and file their tax return. It covers various forms that cater to different aspects of tax filing, ensuring that individuals have access to the required paperwork to report their income, deductions, credits, and other pertinent tax information in compliance with federal regulations.

Grounding:

- Enable Grounding
 - Very high: We have very high confidence that the response is grounded
- Apply grounding heuristics filter

Company name

TaxEase.AI

Data Data store summarization prompt and model selection

- Use default summarization prompt

Select generative model

- gemini-1.5-flash-preview-0514

Payload settings

- Include snippets in response payload

TaxEase Instructions

Upload all the forms in '**data/instructions**' and name it as TaxEase Forms **Name:**

TaxEase Instructions

Type:

- Data Store

Data Store:

- Display Name : TaxEase-Instructions
- Type : Unstructured documents

Description:

This document includes all the instructional manuals necessary for an individual to properly file their tax return with the IRS. It offers detailed guidance on how to complete each required form, ensuring that individuals understand the process and can accurately report their income, deductions, credits, and other relevant tax information in accordance with federal regulations.

Grounding:

- Enable Grounding
 - Very high: We have very high confidence that the response is grounded
- Apply grounding heuristics filter

Company name

TaxEase.AI

Data **Data store summarization prompt and model selection**

- Use default summarization prompt

Select generative model

- gemini-1.5-flash-preview-0514

Payload settings

- Include snippets in response payload

Forms and Instructions

Forms

- 1040-NR
- 1040-S1
- 1040-S2
- 1040-S3
- 1040-SE
- 1040
- 1042-S
- 1095-A
- 1095-B
- 1095-C
- 1098-E
- 1098-T
- 1098
- 1099-B
- 1099-DIV
- 1099-G
- 1099-INT
- 1099-K
- 1099-MISC
- 1099-NEC
- 1099-R
- 1099-S
- 2441
- 3921
- 3922
- 4137
- 4972
- 5498
- 8027
- 8288-A
- 8805
- 8814
- 8839
- 8888

- 8919
- 8959
- 8962
- 8995
- SS-8
- W-2
- W-2AS
- W-2G
- W-2GU

Instructions 📖

- 1040-NR
- 1040-SE
- 1040
- 1042-S
- 1094-B, 1095-B
- 1094-C, 1095-C
- 1095-A
- 1098-E, 1098-T
- 1098
- 1099-B
- 1099-DIV
- 1099-G
- 1099-INT, 1099-OID
- 1099-K
- 1099-MISC, 1099-NEC
- 1099-R, 5498
- 1099-S
- 2441
- 3921, 3922
- 8027
- 8804, 8805, 8813
- 8839
- 8959
- 8962
- 8995
- SS-8
- W-2G_5754
- W-2, W-3