Building AI-Ready Best Practices: The Work of the Commerce Data Governance Board

October 2024

The views expressed in this presentation are those of the presenter and not the Census Bureau.

Ryan Harper, Product Manager

Center for Enterprise Dissemination
U.S. Census Bureau

DOC AI and Open Government Data Assets Working Group

- The RFI that was sent out on April 17th, 2024 received over thirty responses
- The working group was established shortly thereafter and features participants from across the DOC
- The initial working group guidance is expected to be released this year

bea
Bureau of Economic Analysis
U.S. DEPARTMENT OF COMMERCE

UNITED STATES
PATENT AND TRADEMARK OFFICE
uspto

NIST NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY
U.S. DEPARTMENT OF COMMERCE

United States®
Census
Bureau

Generative AI and LLMs

Generative AI applications enable users to create synthetic content, including text, images, audio, and video.

Large language models (LLMs) leverage deep learning algorithms to model language patterns and generate text.

United States Census Bureau

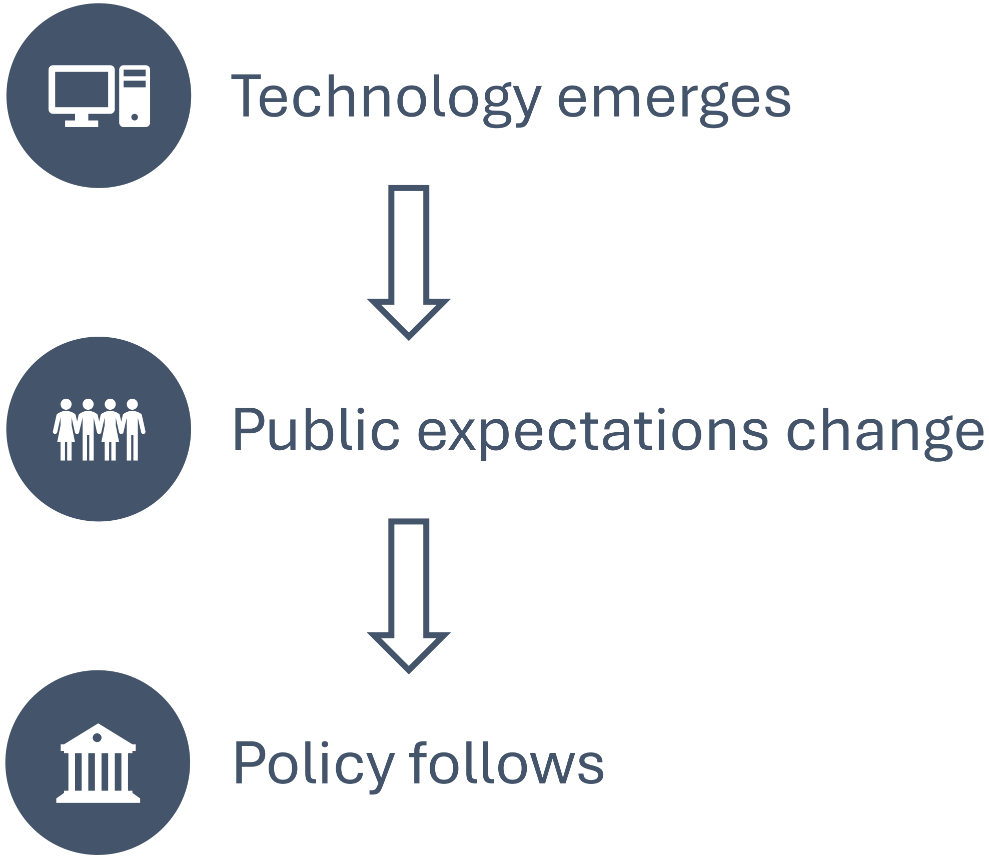
Democratizing Access to Public Data Through Generative AI

The emergence of GenAI has the potential to provide improved information and data access to users, from novices to experts.

GenAI and other AI technologies present opportunities and challenges for data providers and data users—including government entities, industry, academia, and the public at large.

United States Census Bureau

Tech Adoption Patterns Tend to Repeat



Technology emerges

Public expectations change

Policy follows

Changes in the Public Data Landscape

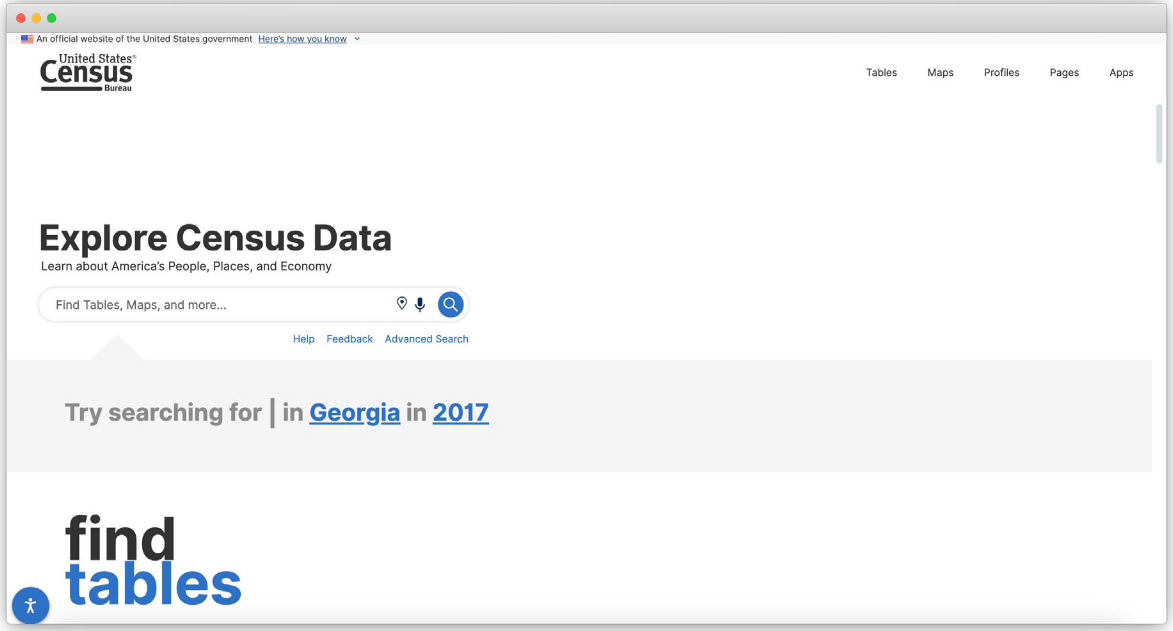
20th Century

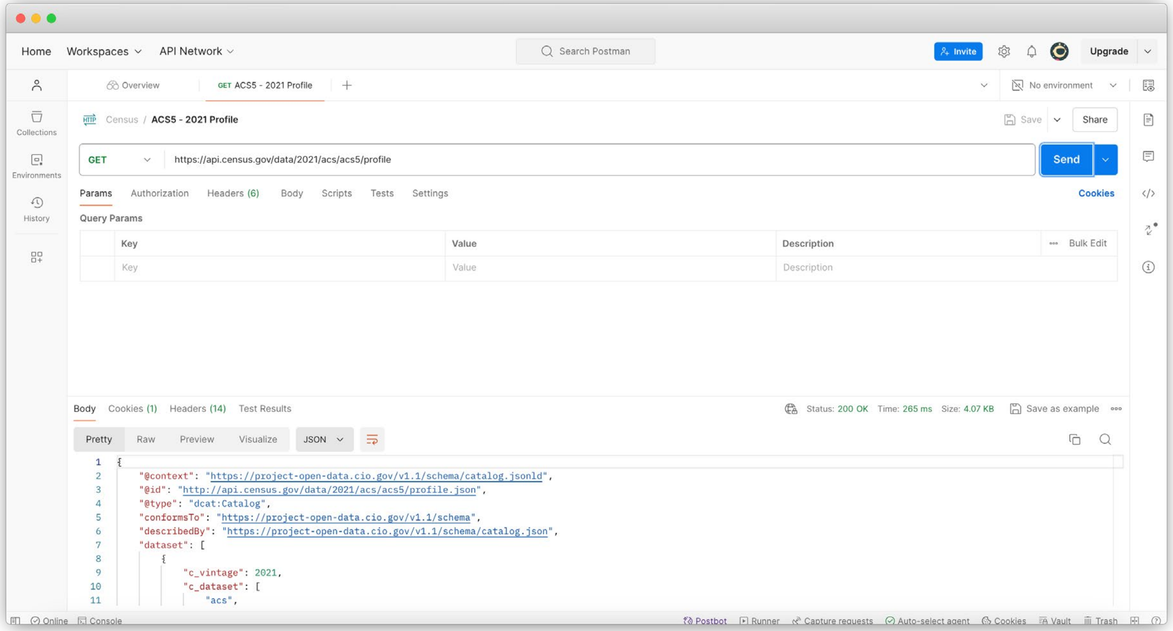
- Federal government was the dominant user
- The statistical system was a near monopoly
- Output was mostly cross-tabs
- Published in books and deposited in libraries, then electronically largely in book formats (PDFs)
- Source data acquisition was difficult and costly
- Privacy and confidentiality risks were small
- Computation was limited and expensive

21st Century

- There are many diverse users of public data
- There are many more organizations that produce similar statistical products
- Output is varied and features visualization and tools for analysis
- Data is accessed electronically online or in secure enclaves
- Source data is more abundant and available in structured and unstructured formats
- Privacy and confidentiality risks are much greater
- Computation is vastly improved

data.census.gov and the U.S. Census API


An official website of the United States government Here's how you know
United States Census Bureau
Tables
Maps
Profiles
Pages
Apps
Explore Census Data
Learn about America's People, Places, and Economy
Find Tables, Maps, and more...
Help
Feedback
Advanced Search
Try searching for | in Georgia in 2017
find
tables

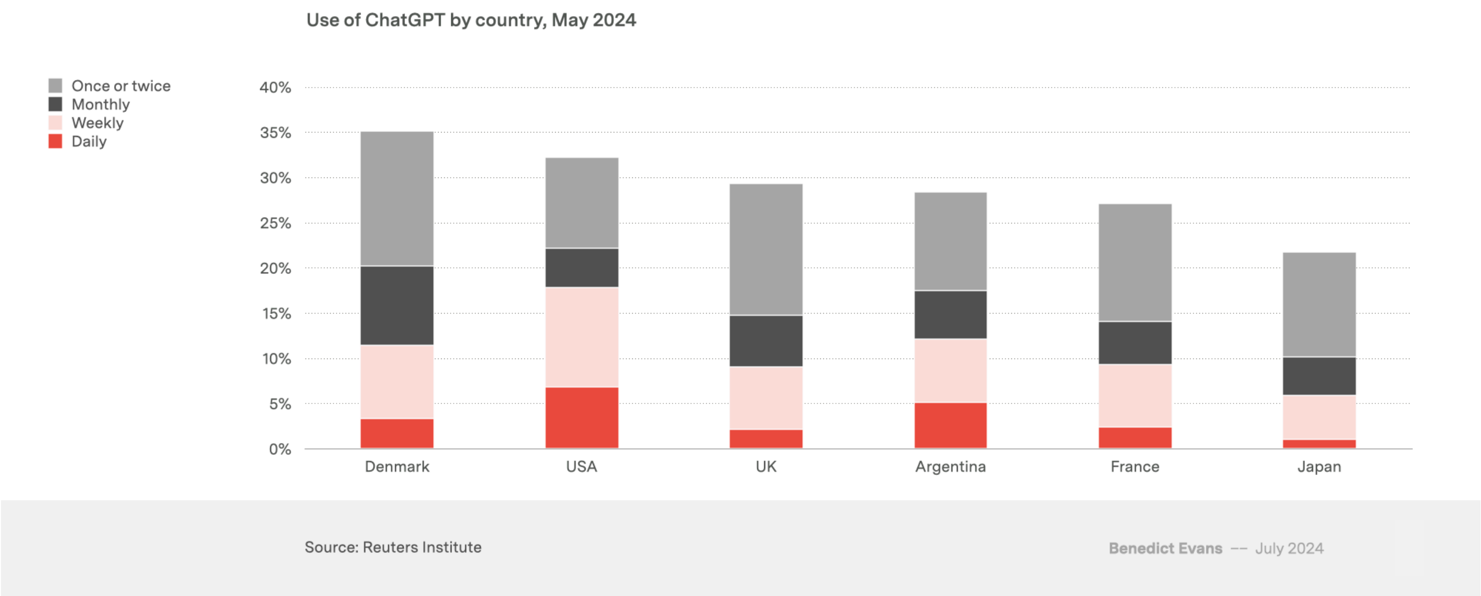


GET https://api.census.gov/data/2021/acs/acs5/profile

Status: 200 OK Time: 265 ms Size: 4.07 KB

```
{
    "@context": "https://project-open-data.cio.gov/v1.1/schema/catalog.jsonld",
    "@id": "http://api.census.gov/data/2021/acs/acs5/profile.json",
    "@type": "dcat:Catalog",
    "conformsTo": "https://project-open-data.cio.gov/v1.1/schema",
    "describedBy": "https://project-open-data.cio.gov/v1.1/schema/catalog.json",
    "dataset": [
        {
            "c_vintage": 2021,
            "c_dataset": [
                "acs",
```

So Are Generative AI and LLMs Next?



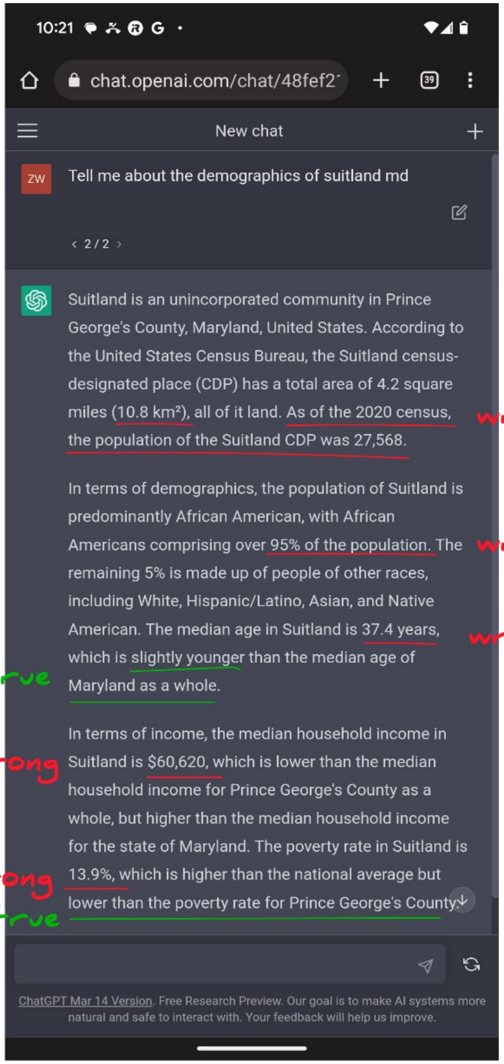
Use of ChatGPT by country, May 2024

Source: Reuters Institute

Benedict Evans — July 2024

Current State

ChatGPT, Bard, and CensusGPT return incorrect results from secondary sources (2023)



Tell me about the demographics of suitland md

Suitland is an unincorporated community in Prince George's County, Maryland, United States. According to the United States Census Bureau, the Suitland census-designated place (CDP) has a total area of 4.2 square miles (10.8 km²), all of it land. As of the 2020 census, the population of the Suitland CDP was 27,568.

wrong^2

In terms of demographics, the population of Suitland is predominantly African American, with African Americans comprising over 95% of the population. The remaining 5% is made up of people of other races, including White, Hispanic/Latino, Asian, and Native American. The median age in Suitland is 37.4 years, which is slightly younger than the median age of Maryland as a whole.

wrong

wrong

true

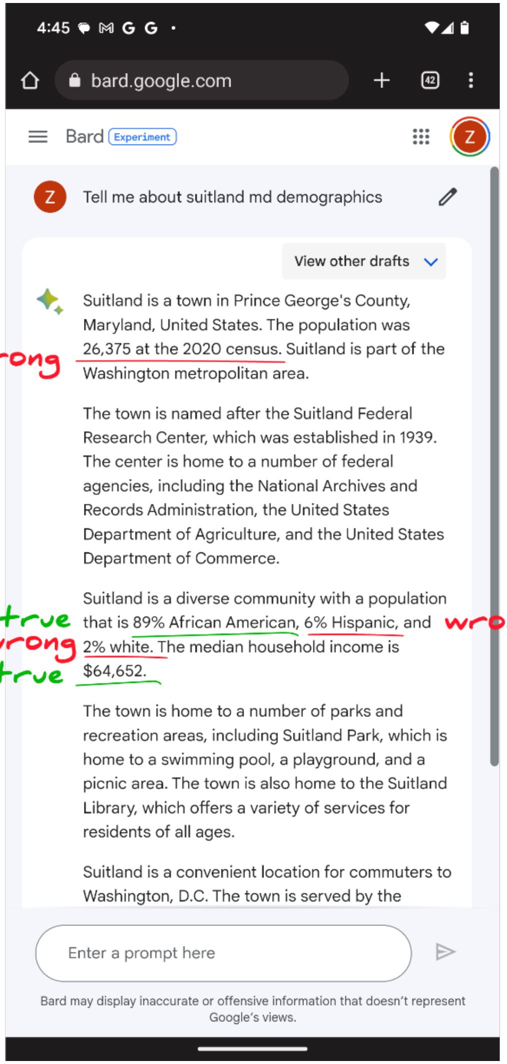
In terms of income, the median household income in Suitland is $60,620, which is lower than the median household income for Prince George's County as a whole, but higher than the median household income for the state of Maryland. The poverty rate in Suitland is 13.9%, which is higher than the national average but lower than the poverty rate for Prince George's County.

wrong

wrong

true

ChatGPT Mar 14 Version. Free Research Preview. Our goal is to make AI systems more natural and safe to interact with. Your feedback will help us improve.



Tell me about suitland md demographics

Suitland is a town in Prince George's County, Maryland, United States. The population was 26,375 at the 2020 census. Suitland is part of the Washington metropolitan area.

wrong

The town is named after the Suitland Federal Research Center, which was established in 1939. The center is home to a number of federal agencies, including the National Archives and Records Administration, the United States Department of Agriculture, and the United States Department of Commerce.

Suitland is a diverse community with a population that is 89% African American, 6% Hispanic, and 2% white. The median household income is $64,652.

true

wrong

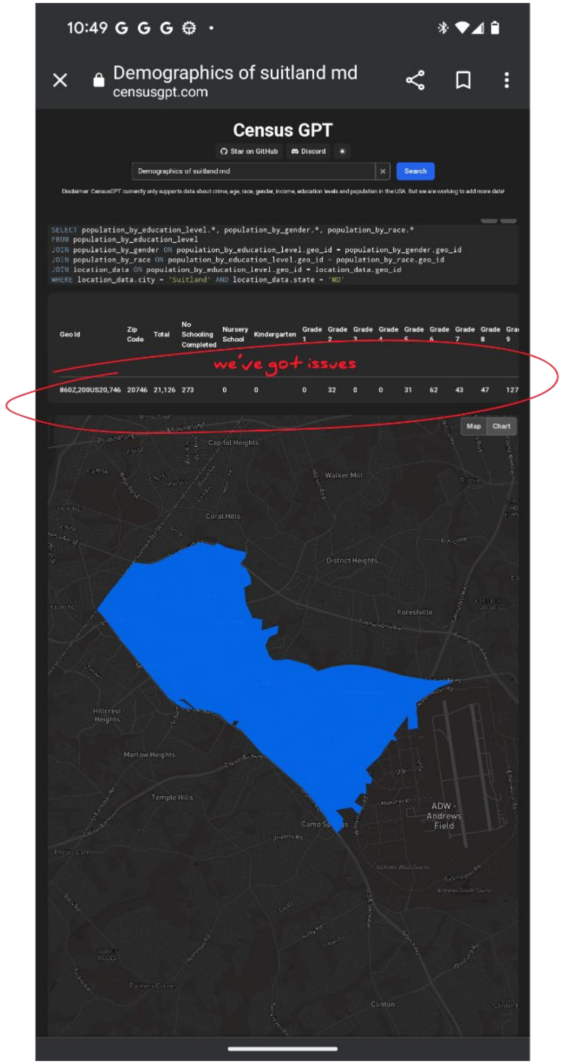
true

wrong

The town is home to a number of parks and recreation areas, including Suitland Park, which is home to a swimming pool, a playground, and a picnic area. The town is also home to the Suitland Library, which offers a variety of services for residents of all ages.

Suitland is a convenient location for commuters to Washington, D.C. The town is served by the

Bard may display inaccurate or offensive information that doesn't represent Google's views.



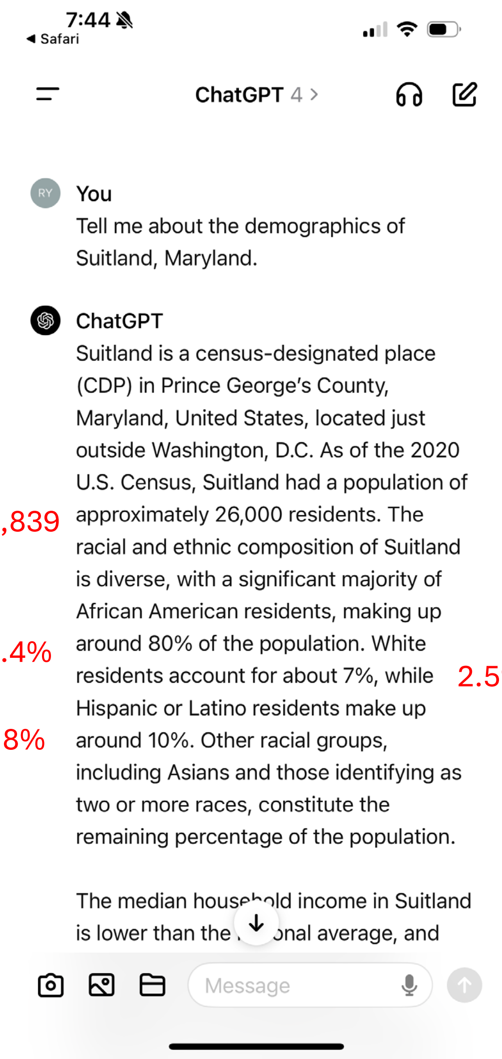
Disclaimer: CensusGPT currently only supports data about crime, age, race, gender, income, education levels and population in the USA. But we are working to add more data!

```
SELECT population_by_education_level.*, population_by_gender.*, population_by_race.*
FROM population_by_education_level
JOIN population_by_gender ON population_by_education_level.geo_id = population_by_gender.geo_id
JOIN population_by_race ON population_by_education_level.geo_id = population_by_race.geo_id
JOIN location_data ON population_by_education_level.geo_id = location_data.geo_id
WHERE location_data.city = 'Suitland' AND location_data.state = 'MD'
```

Geo Id	Zip Code	Total	No Schooling Completed	Nursery School	Kindergarten	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	Gra 9
860Z,200US20,746	20746	21,126	273	0	0	0	32	0	0	31	62	43	47	127

we've got issues

ChatGPT, Gemini, and Copilot return incorrect results from secondary sources (February 2024)



You
Tell me about the demographics of Suitland, Maryland.

ChatGPT
Suitland is a census-designated place (CDP) in Prince George's County, Maryland, United States, located just outside Washington, D.C. As of the 2020 U.S. Census, Suitland had a population of approximately 26,000 residents. The racial and ethnic composition of Suitland is diverse, with a significant majority of African American residents, making up around 80% of the population. White residents account for about 7%, while Hispanic or Latino residents make up around 10%. Other racial groups, including Asians and those identifying as two or more races, constitute the remaining percentage of the population.

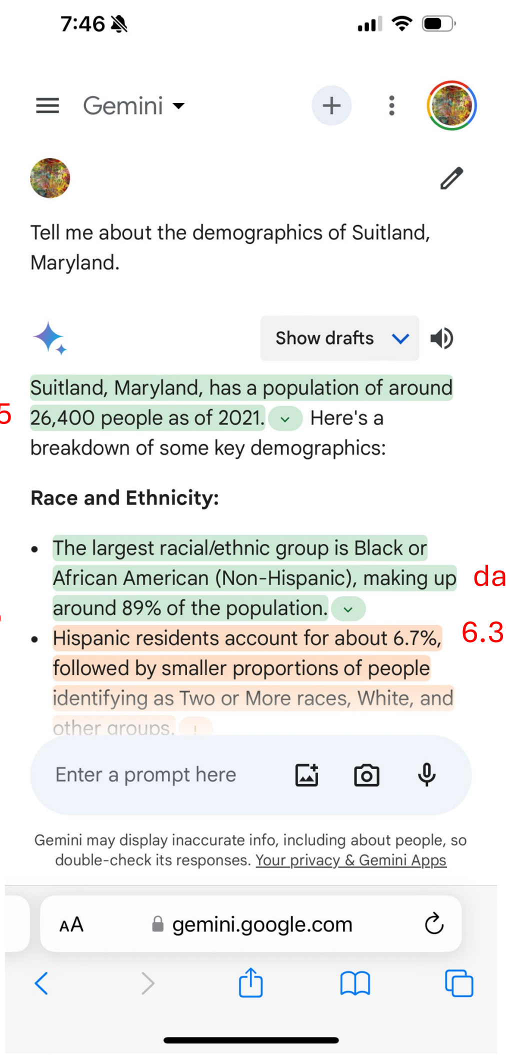
The median household income in Suitland is lower than the onal average, and

25,839

87.4%

2.5%

7.8%



Tell me about the demographics of Suitland, Maryland.

Suitland, Maryland, has a population of around 26,400 people as of 2021. Here's a breakdown of some key demographics:

Race and Ethnicity:

- The largest racial/ethnic group is Black or African American (Non-Hispanic), making up around 89% of the population.
- Hispanic residents account for about 6.7%, followed by smaller proportions of people identifying as Two or More races, White, and other groups.

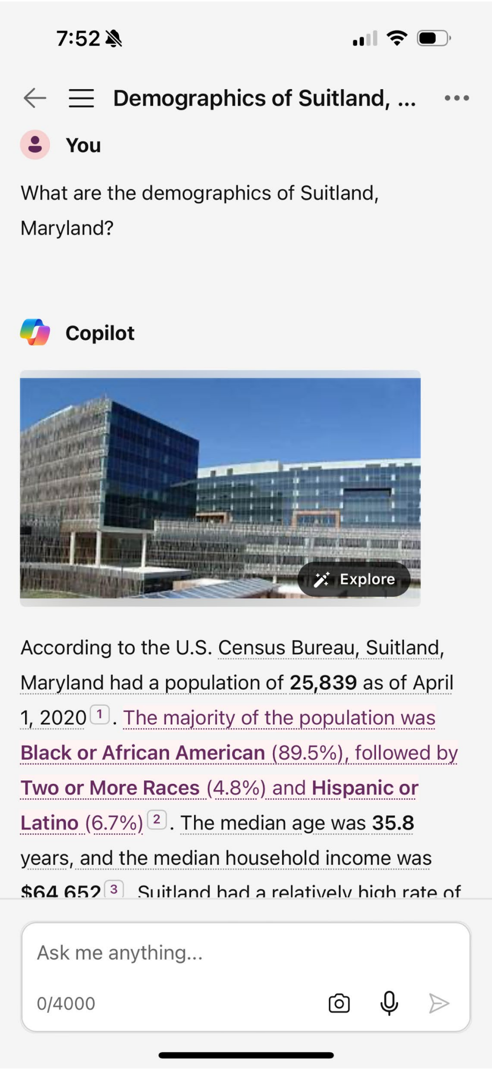
Gemini may display inaccurate info, including about people, so double-check its responses. Your privacy & Gemini Apps

26,375

datausa.io

91%

6.3%



You
What are the demographics of Suitland, Maryland?

Copilot

According to the U.S. Census Bureau, Suitland, Maryland had a population of **25,839** as of April 1, 2020 [1]. The majority of the population was Black or African American (89.5%), followed by Two or More Races (4.8%) and Hispanic or Latino (6.7%) [2]. The median age was **35.8** years, and the median household income was **$64,652** [3]. Suitland had a relatively high rate of

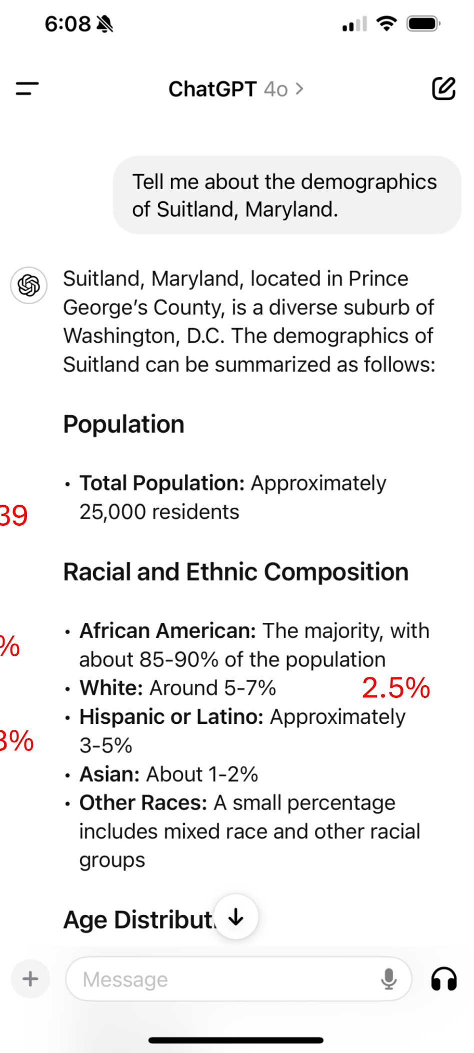
87.4%

3.8%

7.8%

1: neighborhoodscount.com
2: census.gov (QuickFacts)
3: datausa.io

ChatGPT returns incorrect results. Copilot cites secondary sources. Gemini shows improved accuracy. (June 2024)



Tell me about the demographics of Suitland, Maryland.

Suitland, Maryland, located in Prince George's County, is a diverse suburb of Washington, D.C. The demographics of Suitland can be summarized as follows:

Population

- **Total Population:** Approximately 25,000 residents

25,839

Racial and Ethnic Composition

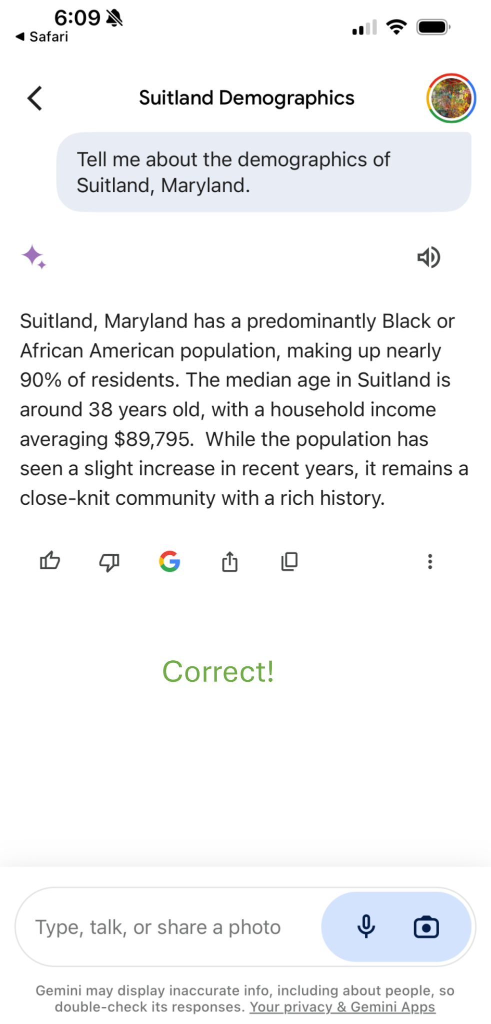
- **African American:** The majority, with about 85-90% of the population
- **White:** Around 5-7%
- **Hispanic or Latino:** Approximately 3-5%
- **Asian:** About 1-2%
- **Other Races:** A small percentage includes mixed race and other racial groups

87.4%

2.5%

7.8%

Age Distribut

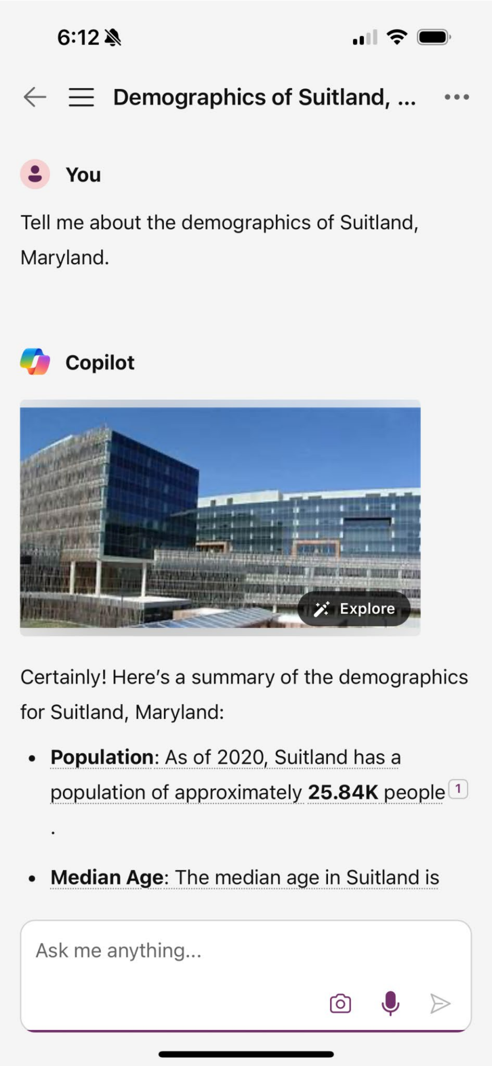


Tell me about the demographics of Suitland, Maryland.

Suitland, Maryland has a predominantly Black or African American population, making up nearly 90% of residents. The median age in Suitland is around 38 years old, with a household income averaging $89,795. While the population has seen a slight increase in recent years, it remains a close-knit community with a rich history.

Correct!

Gemini may display inaccurate info, including about people, so double-check its responses. Your privacy & Gemini Apps



You

Tell me about the demographics of Suitland, Maryland.

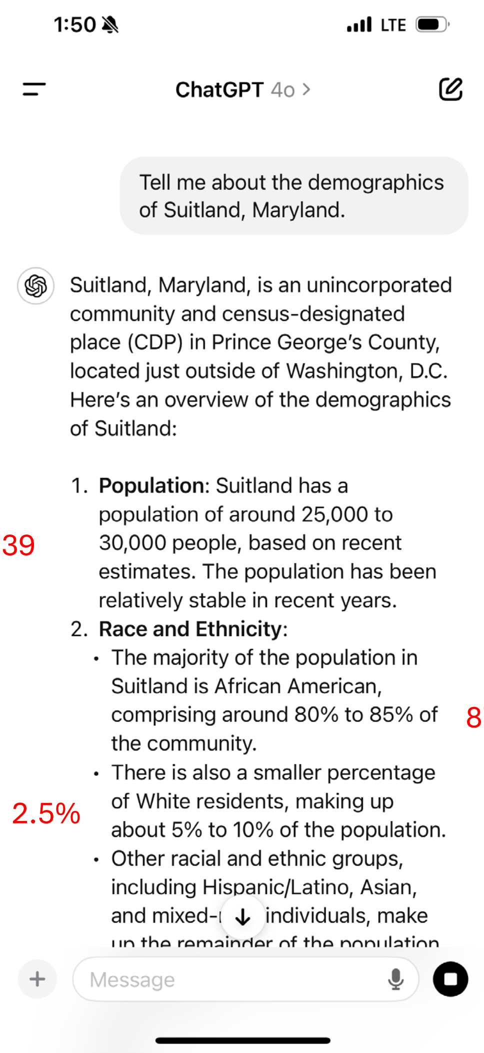
Copilot

Certainly! Here's a summary of the demographics for Suitland, Maryland:

- **Population**: As of 2020, Suitland has a population of approximately **25.84K** people[1].
- **Median Age**: The median age in Suitland is

1: neighborhoodscount.com
2: censusreporter.org

ChatGPT returns incorrect results. Copilot cites secondary sources. Gemini is accurate. (August 2024)



Tell me about the demographics of Suitland, Maryland.

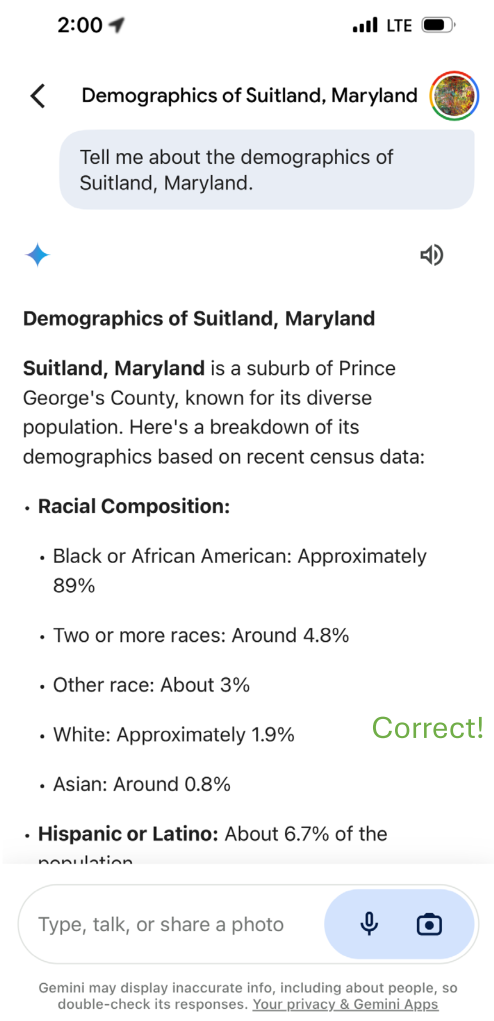
Suitland, Maryland, is an unincorporated community and census-designated place (CDP) in Prince George's County, located just outside of Washington, D.C. Here's an overview of the demographics of Suitland:

1. **Population**: Suitland has a population of around 25,000 to 30,000 people, based on recent estimates. The population has been relatively stable in recent years.
2. **Race and Ethnicity**:
   - The majority of the population in Suitland is African American, comprising around 80% to 85% of the community.
   - There is also a smaller percentage of White residents, making up about 5% to 10% of the population.
   - Other racial and ethnic groups, including Hispanic/Latino, Asian, and mixed-r individuals, make up the remainder of the population

25,839

87.4%

2.5%


2:00
LTE
Demographics of Suitland, Maryland
Type, talk, or share a photo

Tell me about the demographics of Suitland, Maryland.

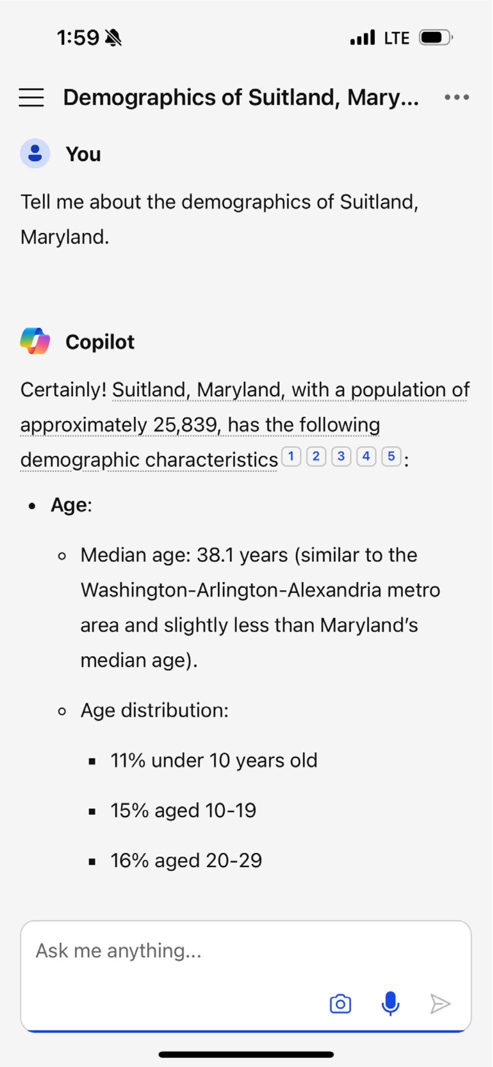
Demographics of Suitland, Maryland

Suitland, Maryland is a suburb of Prince George's County, known for its diverse population. Here's a breakdown of its demographics based on recent census data:

- **Racial Composition:**
  - Black or African American: Approximately 89%
  - Two or more races: Around 4.8%
  - Other race: About 3%
  - White: Approximately 1.9%
  - Asian: Around 0.8%
- **Hispanic or Latino:** About 6.7% of the population

Gemini may display inaccurate info, including about people, so double-check its responses. Your privacy & Gemini Apps

Correct!



You

Tell me about the demographics of Suitland, Maryland.

Copilot

Certainly! Suitland, Maryland, with a population of approximately 25,839, has the following demographic characteristics [1] [2] [3] [4] [5]:

- **Age**:
  - Median age: 38.1 years (similar to the Washington-Arlington-Alexandria metro area and slightly less than Maryland's median age).
  - Age distribution:
    - 11% under 10 years old
    - 15% aged 10-19
    - 16% aged 20-29

1: bing.com
2. censusreporter.org
3: areavibes.com
4. point2homes.com
5. datausa.io

11.4%

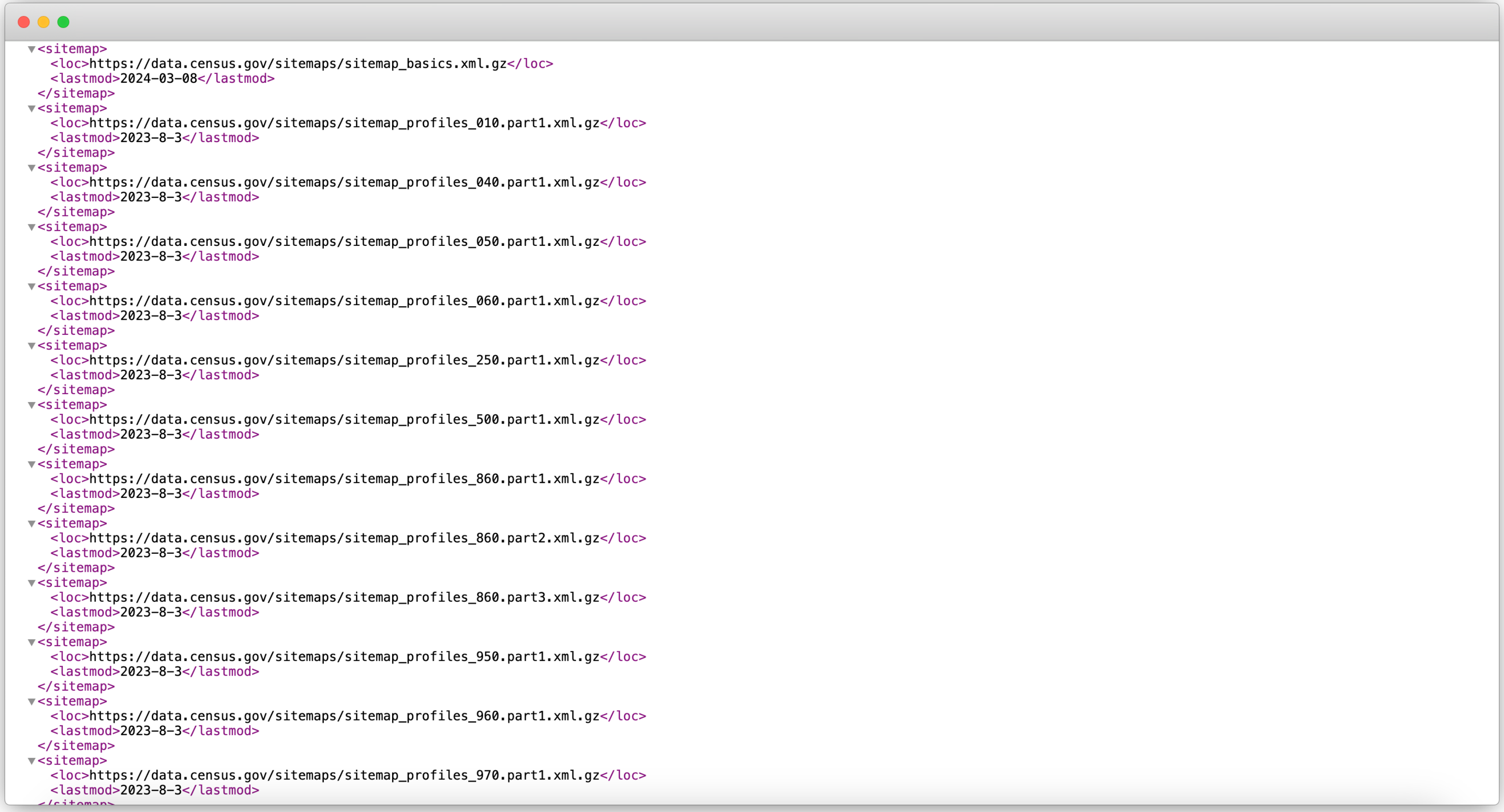
10.2%

14.9%

Emerging Publishing Tactics

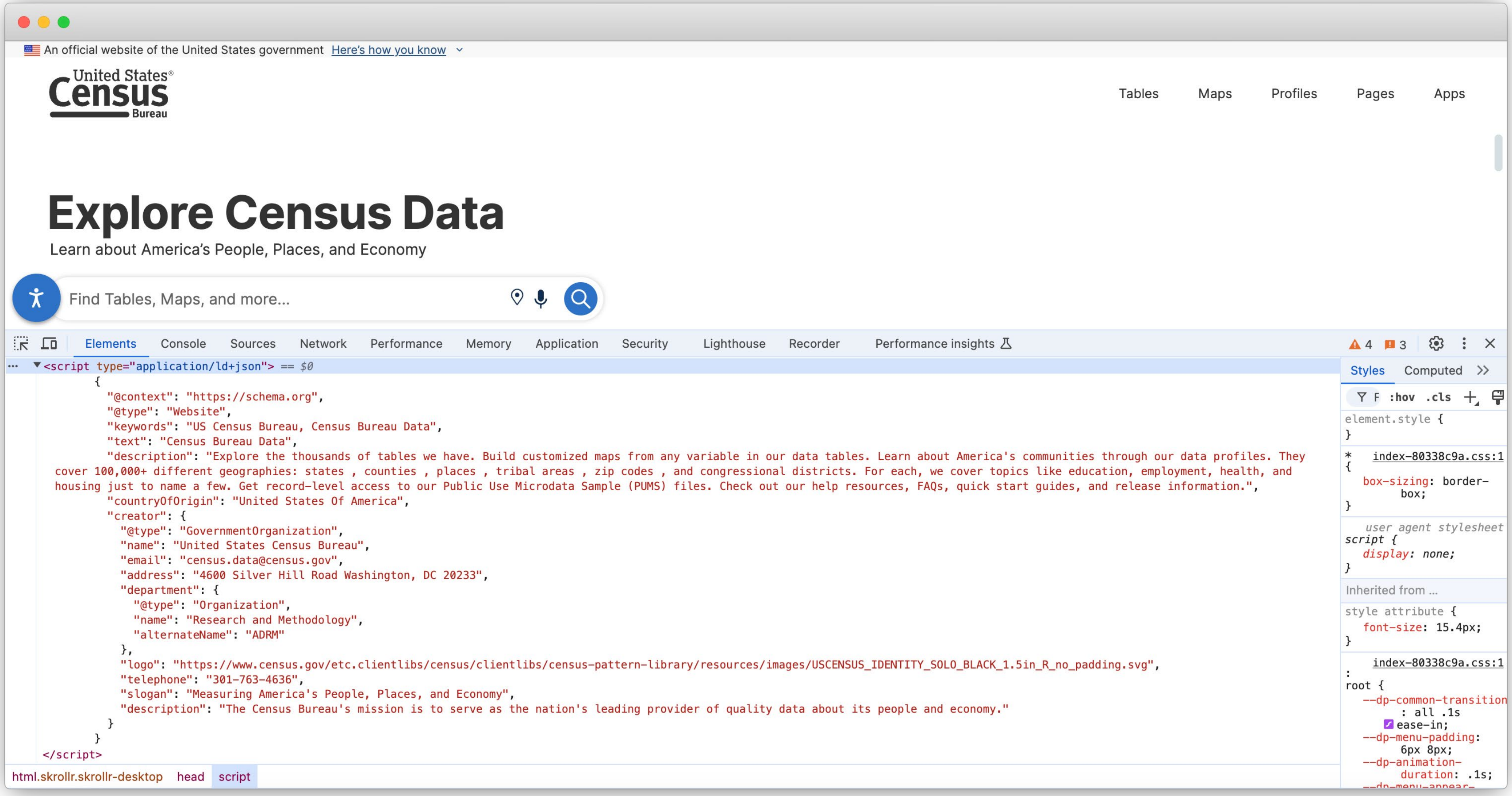
Tactic #1: SEO, but More

Data Discoverability:
Sitemaps, Indexing, robots.txt, Server Side Rendering…



```
▼<sitemap>
   <loc>https://data.census.gov/sitemaps/sitemap_basics.xml.gz</loc>
   <lastmod>2024-03-08</lastmod>
 </sitemap>
▼<sitemap>
   <loc>https://data.census.gov/sitemaps/sitemap_profiles_010.part1.xml.gz</loc>
   <lastmod>2023-8-3</lastmod>
 </sitemap>
▼<sitemap>
   <loc>https://data.census.gov/sitemaps/sitemap_profiles_040.part1.xml.gz</loc>
   <lastmod>2023-8-3</lastmod>
 </sitemap>
▼<sitemap>
   <loc>https://data.census.gov/sitemaps/sitemap_profiles_050.part1.xml.gz</loc>
   <lastmod>2023-8-3</lastmod>
 </sitemap>
▼<sitemap>
   <loc>https://data.census.gov/sitemaps/sitemap_profiles_060.part1.xml.gz</loc>
   <lastmod>2023-8-3</lastmod>
 </sitemap>
▼<sitemap>
   <loc>https://data.census.gov/sitemaps/sitemap_profiles_250.part1.xml.gz</loc>
   <lastmod>2023-8-3</lastmod>
 </sitemap>
▼<sitemap>
   <loc>https://data.census.gov/sitemaps/sitemap_profiles_500.part1.xml.gz</loc>
   <lastmod>2023-8-3</lastmod>
 </sitemap>
▼<sitemap>
   <loc>https://data.census.gov/sitemaps/sitemap_profiles_860.part1.xml.gz</loc>
   <lastmod>2023-8-3</lastmod>
 </sitemap>
▼<sitemap>
   <loc>https://data.census.gov/sitemaps/sitemap_profiles_860.part2.xml.gz</loc>
   <lastmod>2023-8-3</lastmod>
 </sitemap>
▼<sitemap>
   <loc>https://data.census.gov/sitemaps/sitemap_profiles_860.part3.xml.gz</loc>
   <lastmod>2023-8-3</lastmod>
 </sitemap>
▼<sitemap>
   <loc>https://data.census.gov/sitemaps/sitemap_profiles_950.part1.xml.gz</loc>
   <lastmod>2023-8-3</lastmod>
 </sitemap>
▼<sitemap>
   <loc>https://data.census.gov/sitemaps/sitemap_profiles_960.part1.xml.gz</loc>
   <lastmod>2023-8-3</lastmod>
 </sitemap>
▼<sitemap>
   <loc>https://data.census.gov/sitemaps/sitemap_profiles_970.part1.xml.gz</loc>
   <lastmod>2023-8-3</lastmod>
 </sitemap>
```

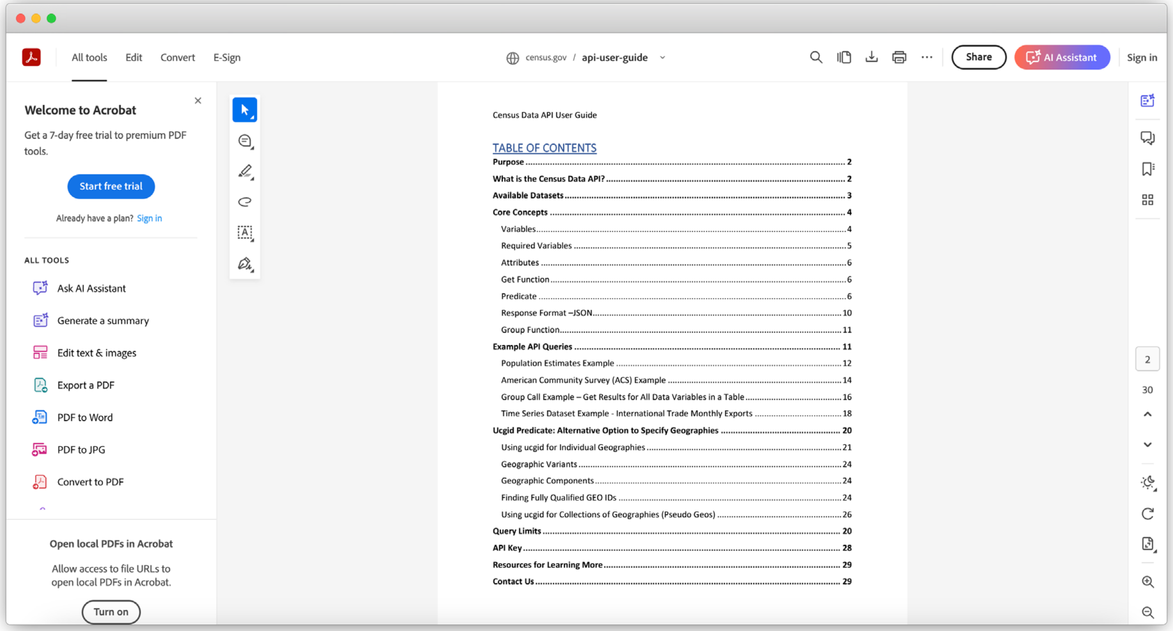
What Is This Data About?
Meta Tags, Open Graph Tags, schema.org, Croissant…



```
<script type="application/ld+json"> == $0
        {
          "@context": "https://schema.org",
          "@type": "Website",
          "keywords": "US Census Bureau, Census Bureau Data",
          "text": "Census Bureau Data",
          "description": "Explore the thousands of tables we have. Build customized maps from any variable in our data tables. Learn about America's communities through our data profiles. They cover 100,000+ different geographies: states , counties , places , tribal areas , zip codes , and congressional districts. For each, we cover topics like education, employment, health, and housing just to name a few. Get record-level access to our Public Use Microdata Sample (PUMS) files. Check out our help resources, FAQs, quick start guides, and release information.",
          "countryOfOrigin": "United States Of America",
          "creator": {
            "@type": "GovernmentOrganization",
            "name": "United States Census Bureau",
            "email": "census.data@census.gov",
            "address": "4600 Silver Hill Road Washington, DC 20233",
            "department": {
              "@type": "Organization",
              "name": "Research and Methodology",
              "alternateName": "ADRM"
            },
            "logo": "https://www.census.gov/etc.clientlibs/census/clientlibs/census-pattern-library/resources/images/USCENSUS_IDENTITY_SOLO_BLACK_1.5in_R_no_padding.svg",
            "telephone": "301-763-4636",
            "slogan": "Measuring America's People, Places, and Economy",
            "description": "The Census Bureau's mission is to serve as the nation's leading provider of quality data about its people and economy."
          }
        }
</script>
```

```
element.style {
}
*   index-80338c9a.css:1
{
  box-sizing: border-
      box;
}
  user agent stylesheet
script {
  display: none;
}
style attribute {
  font-size: 15.4px;
}
  index-80338c9a.css:1
:
root {
  --dp-common-transition
      : all .1s
      ease-in;
  --dp-menu-padding:
      6px 8px;
  --dp-animation-
      duration: .1s;
```

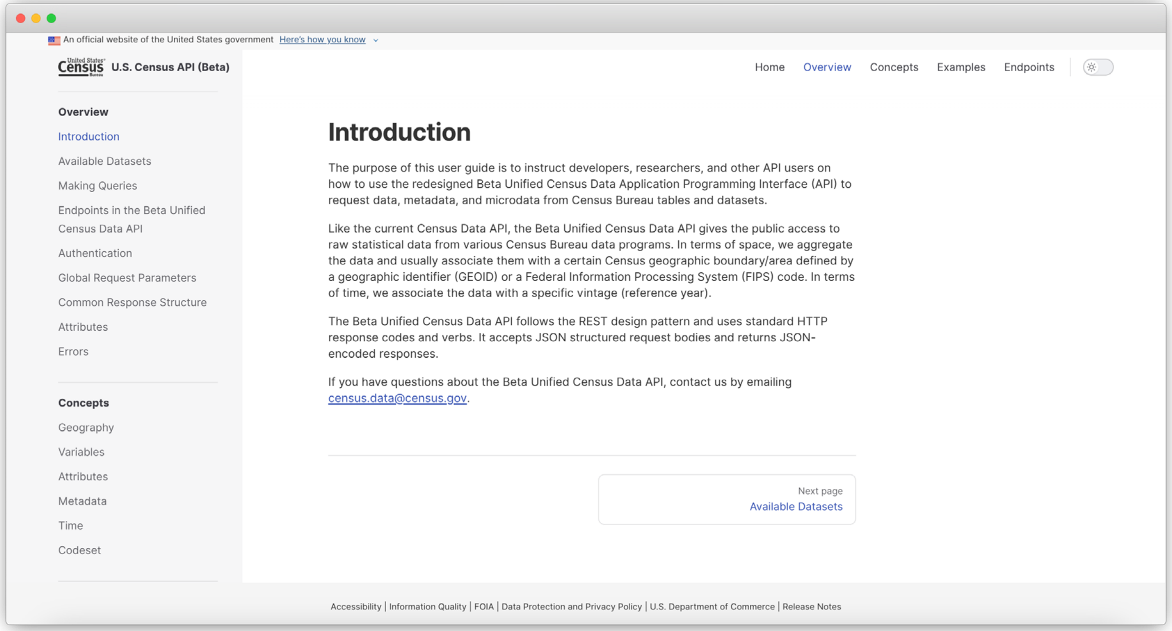
Tell It To Me Straight:
Documentation and Prose Descriptions



Census Data API User Guide

TABLE OF CONTENTS

Purpose 2
What is the Census Data API? 2
Available Datasets 3
Core Concepts 4
  Variables 4
  Required Variables 5
  Attributes 6
  Get Function 6
  Predicate 6
  Response Format –JSON 10
  Group Function 11
Example API Queries 11
  Population Estimates Example 12
  American Community Survey (ACS) Example 14
  Group Call Example – Get Results for All Data Variables in a Table 16
  Time Series Dataset Example - International Trade Monthly Exports 18
Ucgid Predicate: Alternative Option to Specify Geographies 20
  Using ucgid for Individual Geographies 21
  Geographic Variants 24
  Geographic Components 24
  Finding Fully Qualified GEO IDs 24
  Using ucgid for Collections of Geographies (Pseudo Geos) 26
Query Limits 20
API Key 28
Resources for Learning More 29
Contact Us 29


An official website of the United States government Here's how you know
U.S. Census API (Beta)
Home
Overview
Concepts
Examples
Endpoints
Overview
Introduction
Available Datasets
Making Queries
Endpoints in the Beta Unified Census Data API
Authentication
Global Request Parameters
Common Response Structure
Attributes
Errors
Concepts
Geography
Variables
Attributes
Metadata
Time
Codeset
Next page
Available Datasets
Accessibility | Information Quality | FOIA | Data Protection and Privacy Policy | U.S. Department of Commerce | Release Notes

Introduction

The purpose of this user guide is to instruct developers, researchers, and other API users on how to use the redesigned Beta Unified Census Data Application Programming Interface (API) to request data, metadata, and microdata from Census Bureau tables and datasets.

Like the current Census Data API, the Beta Unified Census Data API gives the public access to raw statistical data from various Census Bureau data programs. In terms of space, we aggregate the data and usually associate them with a certain Census geographic boundary/area defined by a geographic identifier (GEOID) or a Federal Information Processing System (FIPS) code. In terms of time, we associate the data with a specific vintage (reference year).

The Beta Unified Census Data API follows the REST design pattern and uses standard HTTP response codes and verbs. It accepts JSON structured request bodies and returns JSON-encoded responses.

If you have questions about the Beta Unified Census Data API, contact us by emailing census.data@census.gov.

Tactic #2: AI-Ready Data

Aiding Data Ingestion:
Proprietary and Unstructured < Open and Structured

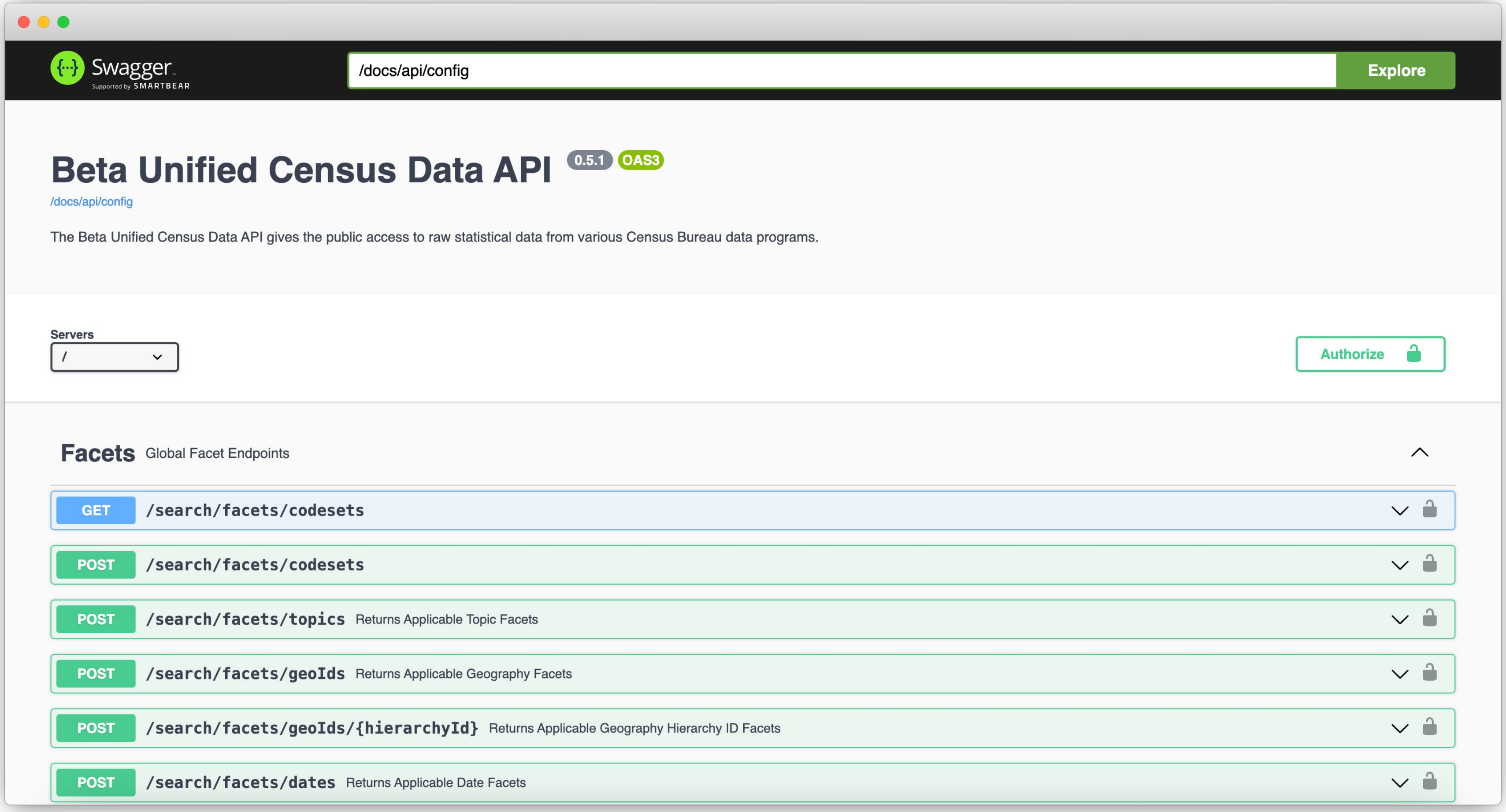
XLSX PDF

VS.

XML CSV

JSON Parquet

Data Retrieval via API:
Open Standards, Accessible Metadata



/docs/api/config

Beta Unified Census Data API 0.5.1 OAS3

/docs/api/config

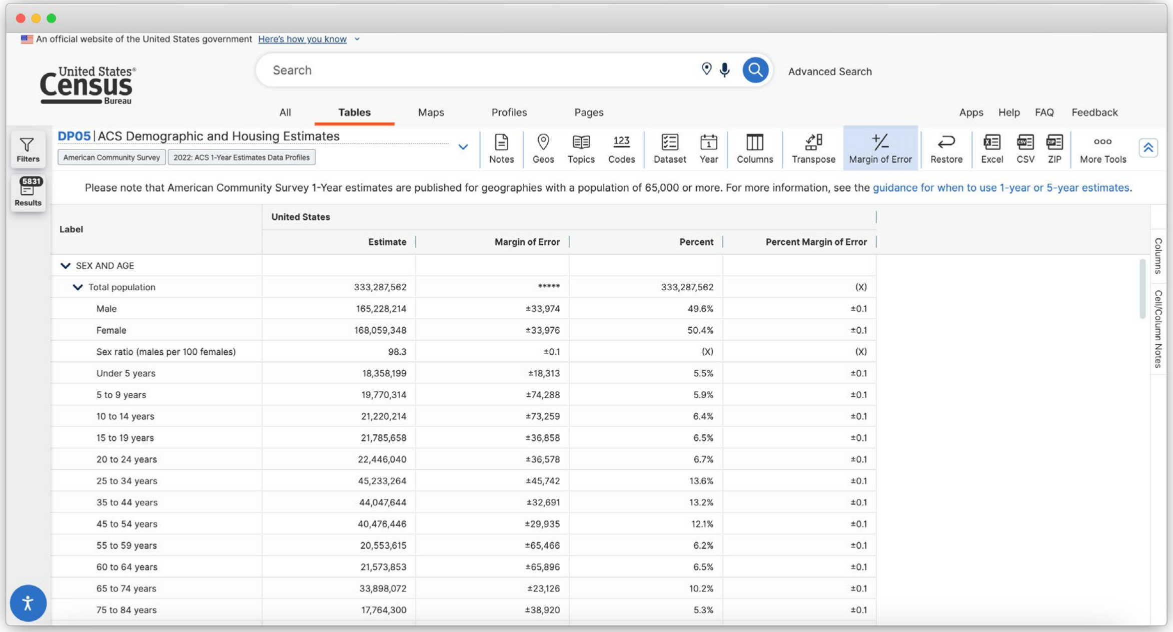
The Beta Unified Census Data API gives the public access to raw statistical data from various Census Bureau data programs.

Servers
/

Facets Global Facet Endpoints

- GET `/search/facets/codesets`
- POST `/search/facets/codesets`
- POST `/search/facets/topics` Returns Applicable Topic Facets
- POST `/search/facets/geoIds` Returns Applicable Geography Facets
- POST `/search/facets/geoIds/{hierarchyId}` Returns Applicable Geography Hierarchy ID Facets
- POST `/search/facets/dates` Returns Applicable Date Facets

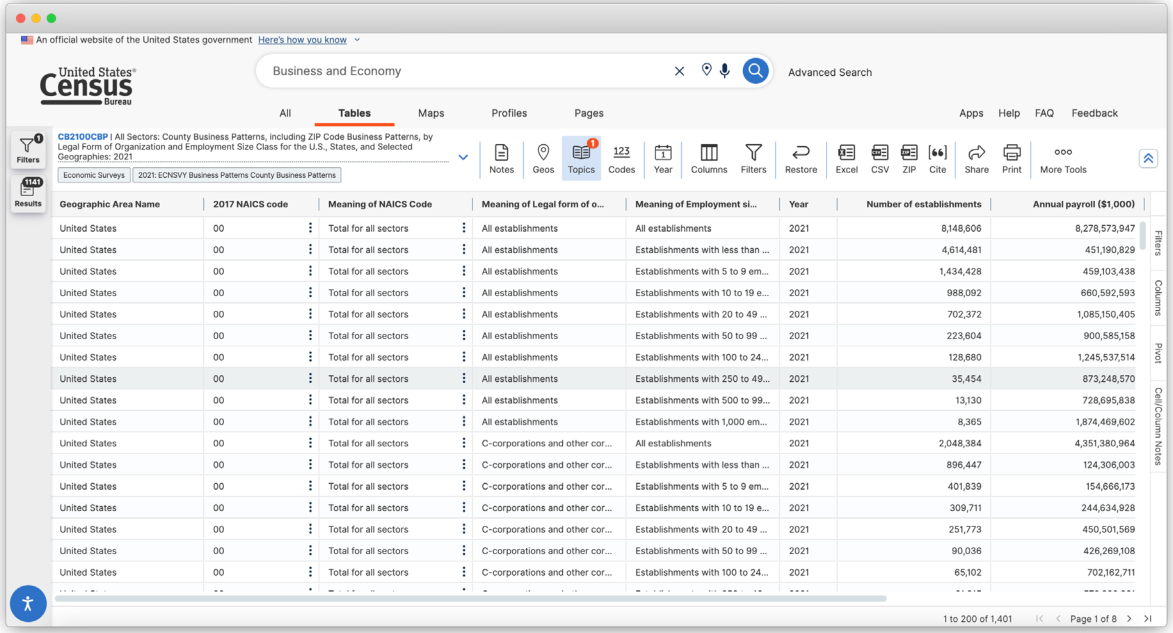
Tabular Data:
Hierarchical Tables < Flat Tables



DP05 | ACS Demographic and Housing Estimates

Please note that American Community Survey 1-Year estimates are published for geographies with a population of 65,000 or more. For more information, see the guidance for when to use 1-year or 5-year estimates.

Label	United States			
	Estimate	Margin of Error	Percent	Percent Margin of Error
SEX AND AGE				
Total population	333,287,562	*****	333,287,562	(X)
Male	165,228,214	±33,974	49.6%	±0.1
Female	168,059,348	±33,976	50.4%	±0.1
Sex ratio (males per 100 females)	98.3	±0.1	(X)	(X)
Under 5 years	18,358,199	±18,313	5.5%	±0.1
5 to 9 years	19,770,314	±74,288	5.9%	±0.1
10 to 14 years	21,220,214	±73,259	6.4%	±0.1
15 to 19 years	21,785,658	±36,858	6.5%	±0.1
20 to 24 years	22,446,040	±36,578	6.7%	±0.1
25 to 34 years	45,233,264	±45,742	13.6%	±0.1
35 to 44 years	44,047,644	±32,691	13.2%	±0.1
45 to 54 years	40,476,446	±29,935	12.1%	±0.1
55 to 59 years	20,553,615	±65,466	6.2%	±0.1
60 to 64 years	21,573,853	±65,896	6.5%	±0.1
65 to 74 years	33,898,072	±23,126	10.2%	±0.1
75 to 84 years	17,764,300	±38,920	5.3%	±0.1



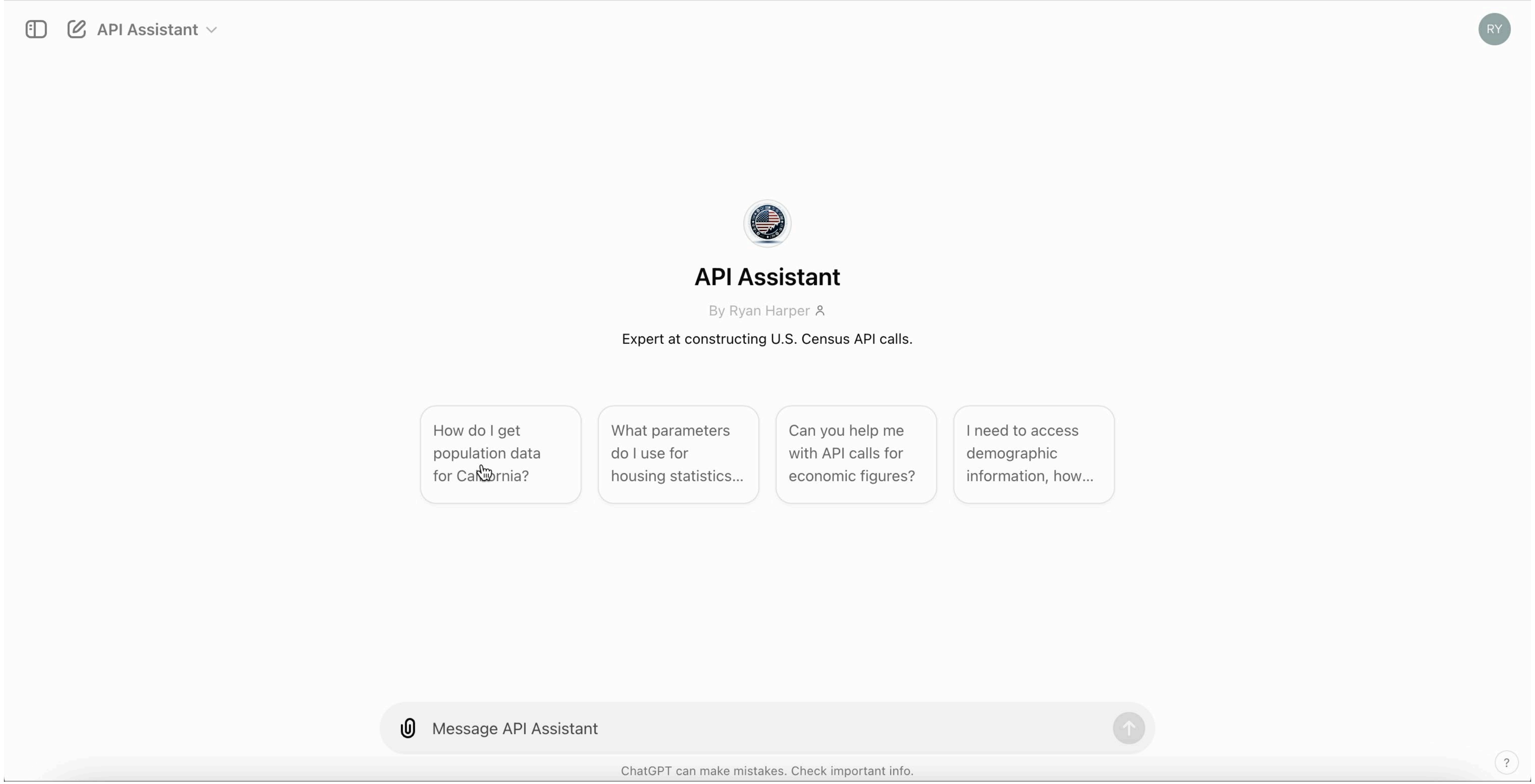
CB2100CBP | All Sectors: County Business Patterns, including ZIP Code Business Patterns, by Legal Form of Organization and Employment Size Class for the U.S., States, and Selected Geographies: 2021

Geographic Area Name	2017 NAICS code	Meaning of NAICS Code	Meaning of Legal form of o...	Meaning of Employment si...	Year	Number of establishments	Annual payroll ($1,000)
United States	00	Total for all sectors	All establishments	All establishments	2021	8,148,606	8,278,573,947
United States	00	Total for all sectors	All establishments	Establishments with less than ...	2021	4,614,481	451,190,829
United States	00	Total for all sectors	All establishments	Establishments with 5 to 9 em...	2021	1,434,428	459,103,438
United States	00	Total for all sectors	All establishments	Establishments with 10 to 19 e...	2021	988,092	660,592,593
United States	00	Total for all sectors	All establishments	Establishments with 20 to 49 ...	2021	702,372	1,085,150,405
United States	00	Total for all sectors	All establishments	Establishments with 50 to 99 ...	2021	223,604	900,585,158
United States	00	Total for all sectors	All establishments	Establishments with 100 to 24...	2021	128,680	1,245,537,514
United States	00	Total for all sectors	All establishments	Establishments with 250 to 49...	2021	35,454	873,248,570
United States	00	Total for all sectors	All establishments	Establishments with 500 to 99...	2021	13,130	728,695,838
United States	00	Total for all sectors	All establishments	Establishments with 1,000 em...	2021	8,365	1,874,469,602
United States	00	Total for all sectors	C-corporations and other cor...	All establishments	2021	2,048,384	4,351,380,964
United States	00	Total for all sectors	C-corporations and other cor...	Establishments with less than ...	2021	896,447	124,306,003
United States	00	Total for all sectors	C-corporations and other cor...	Establishments with 5 to 9 em...	2021	401,839	154,666,173
United States	00	Total for all sectors	C-corporations and other cor...	Establishments with 10 to 19 e...	2021	309,711	244,634,928
United States	00	Total for all sectors	C-corporations and other cor...	Establishments with 20 to 49 ...	2021	251,773	450,501,569
United States	00	Total for all sectors	C-corporations and other cor...	Establishments with 50 to 99 ...	2021	90,036	426,269,108
United States	00	Total for all sectors	C-corporations and other cor...	Establishments with 100 to 24...	2021	65,102	702,162,711

United States Census Bureau

Tactic #3: Meet AI Systems Where They Are

Census API Assistant GPT (Research Prototype)



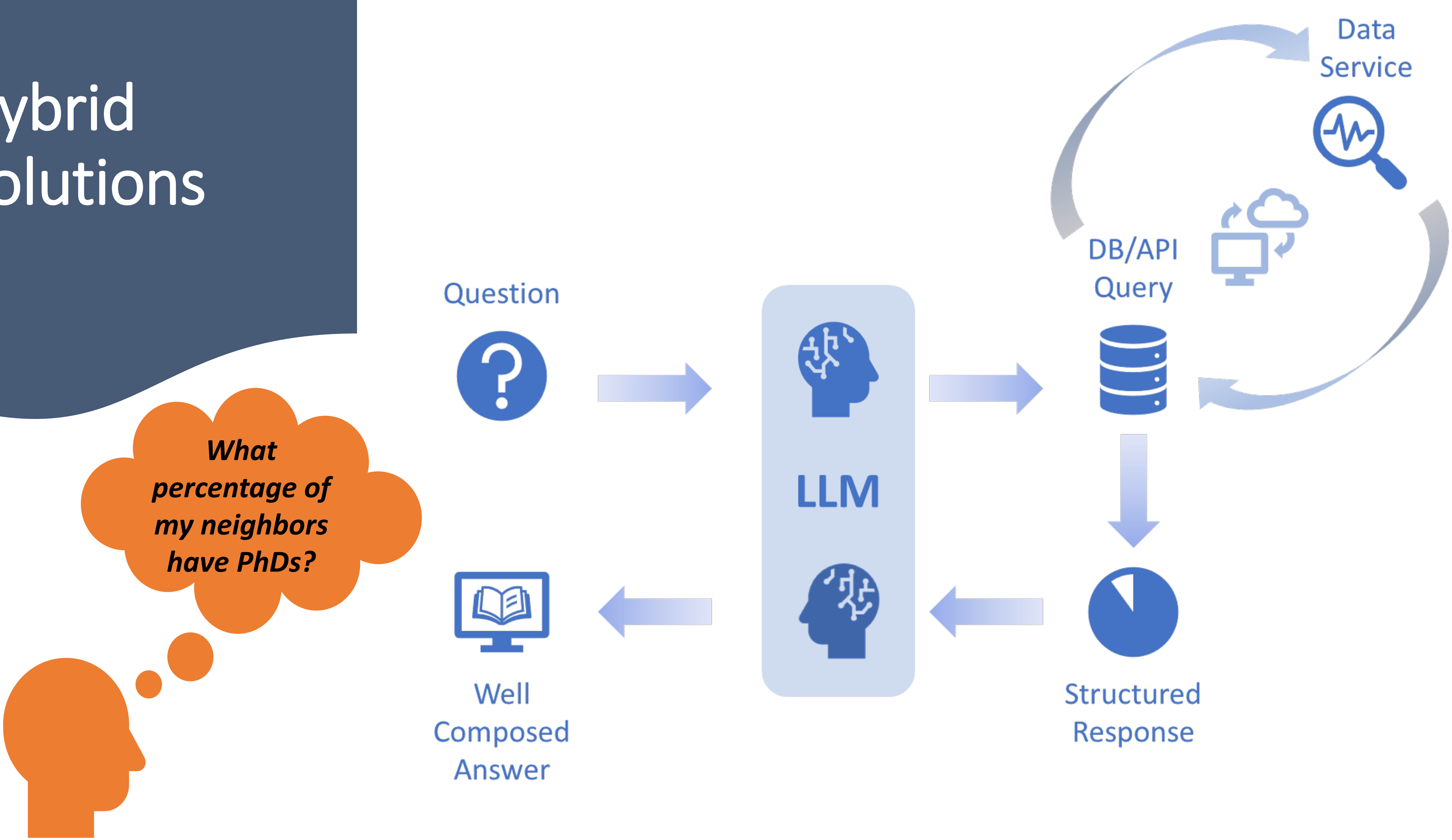
API Assistant

By Ryan Harper

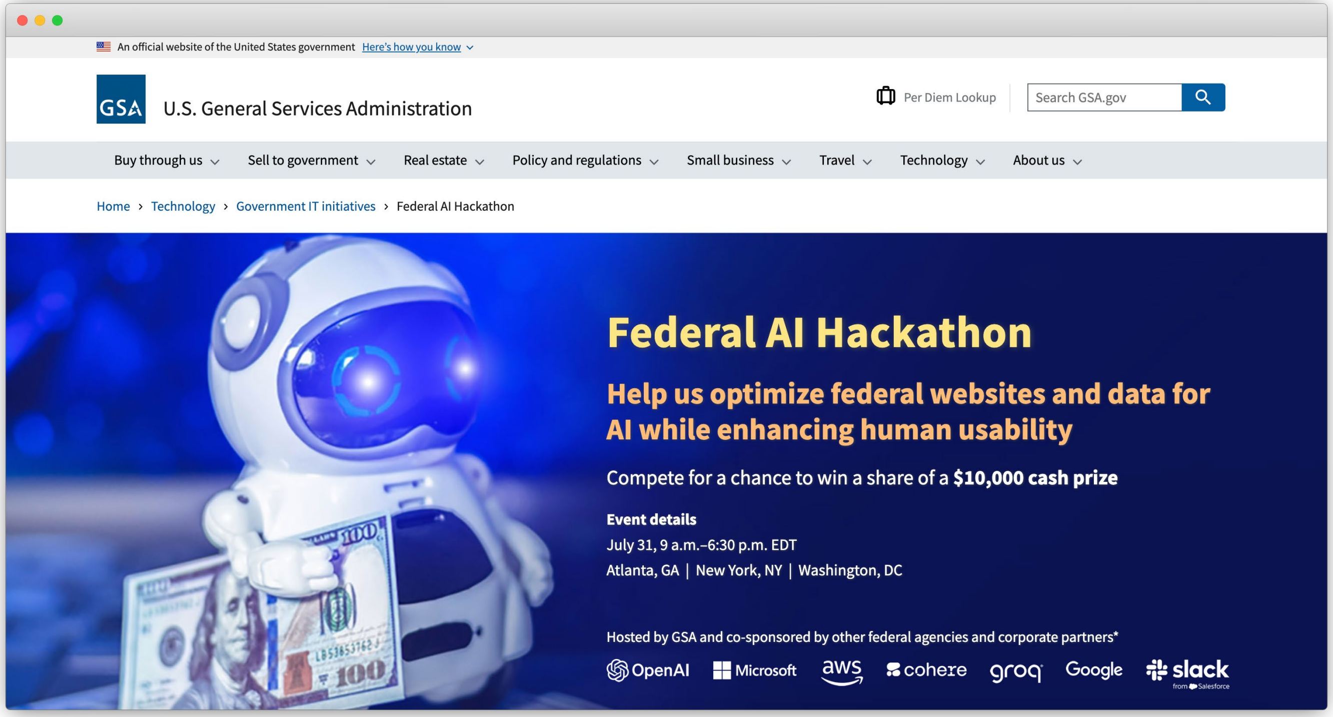
Expert at constructing U.S. Census API calls.

- How do I get population data for California?
- What parameters do I use for housing statistics...
- Can you help me with API calls for economic figures?
- I need to access demographic information, how...

Hybrid Solutions



Partnership and Engagement: Community



Federal AI Hackathon

Help us optimize federal websites and data for AI while enhancing human usability

Compete for a chance to win a share of a **$10,000 cash prize**

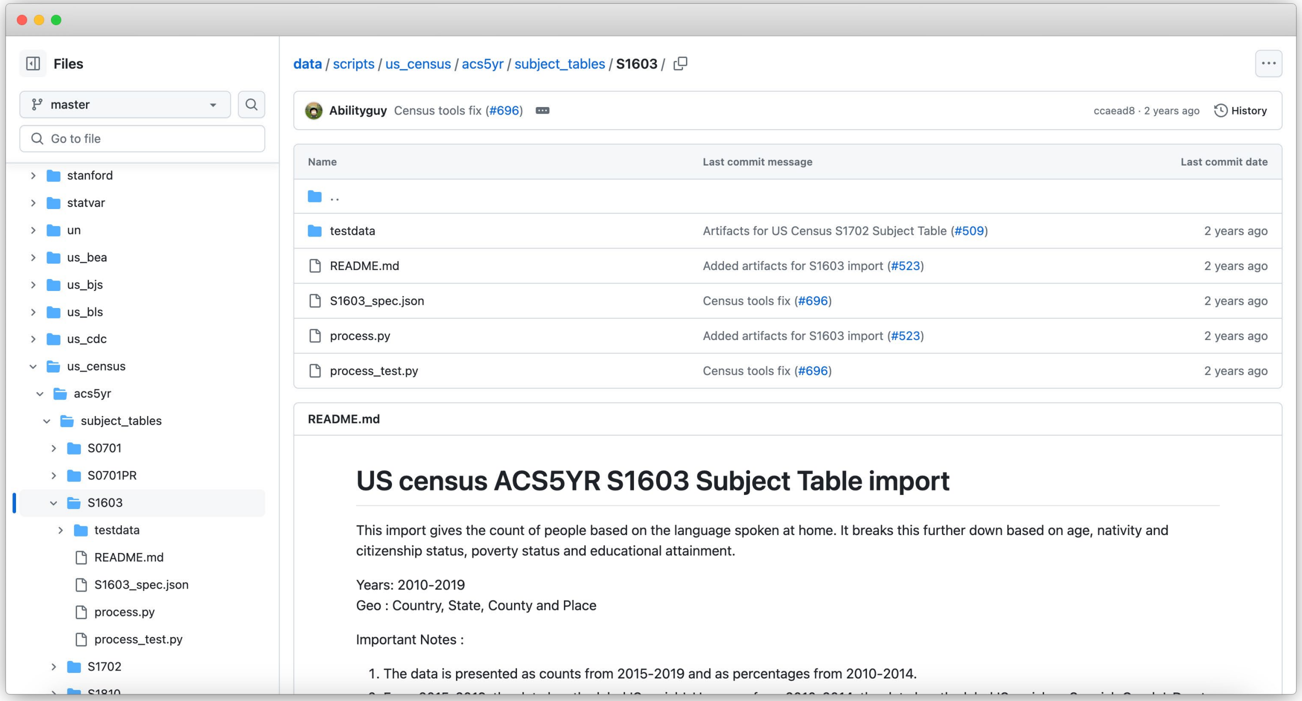
Event details

July 31, 9 a.m.–6:30 p.m. EDT

Atlanta, GA | New York, NY | Washington, DC

Hosted by GSA and co-sponsored by other federal agencies and corporate partners*

Partnership and Engagement: Open Source Collaboration



data / scripts / us_census / acs5yr / subject_tables / S1603 /

Abilityguy Census tools fix (#696) ccaead8 · 2 years ago

Name	Last commit message	Last commit date
..		
testdata	Artifacts for US Census S1702 Subject Table (#509)	2 years ago
README.md	Added artifacts for S1603 import (#523)	2 years ago
S1603_spec.json	Census tools fix (#696)	2 years ago
process.py	Added artifacts for S1603 import (#523)	2 years ago
process_test.py	Census tools fix (#696)	2 years ago

README.md

US census ACS5YR S1603 Subject Table import

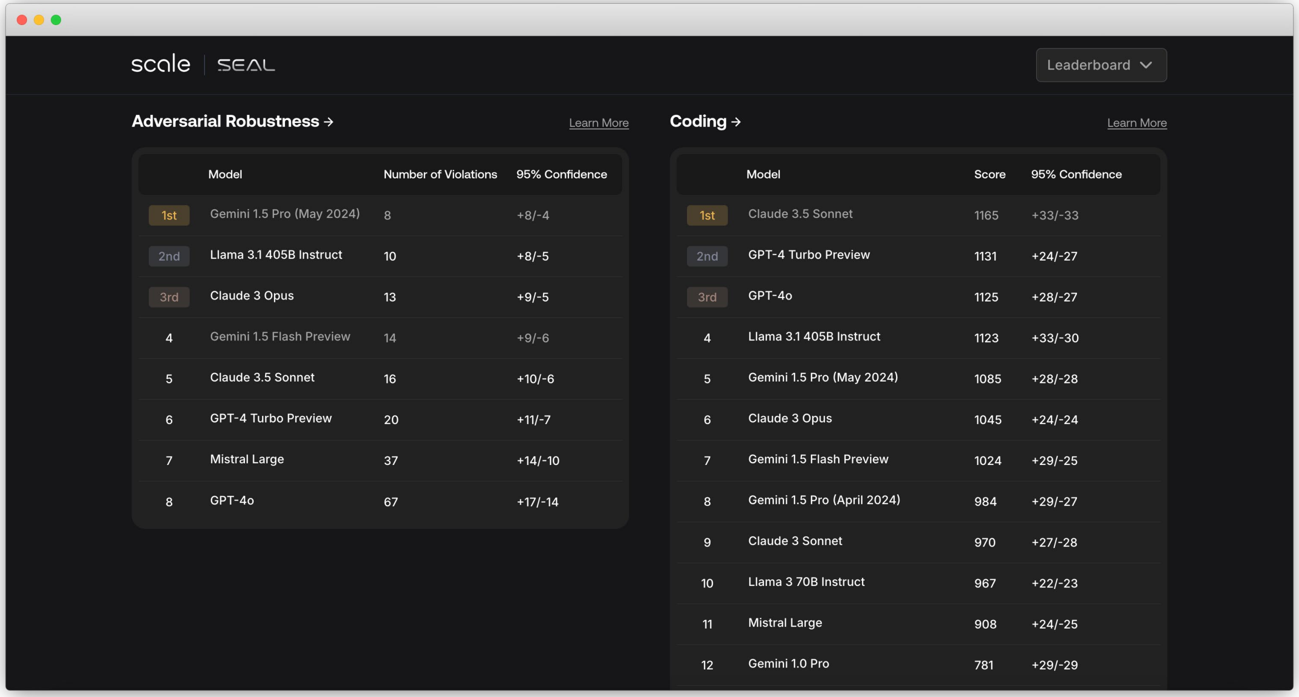
This import gives the count of people based on the language spoken at home. It breaks this further down based on age, nativity and citizenship status, poverty status and educational attainment.

Years: 2010-2019
Geo : Country, State, County and Place

Important Notes :

1. The data is presented as counts from 2015-2019 and as percentages from 2010-2014.

Partnership and Engagement: Benchmarks



Adversarial Robustness →

Learn More

	Model	Number of Violations	95% Confidence
1st	Gemini 1.5 Pro (May 2024)	8	+8/-4
2nd	Llama 3.1 405B Instruct	10	+8/-5
3rd	Claude 3 Opus	13	+9/-5
4	Gemini 1.5 Flash Preview	14	+9/-6
5	Claude 3.5 Sonnet	16	+10/-6
6	GPT-4 Turbo Preview	20	+11/-7
7	Mistral Large	37	+14/-10
8	GPT-4o	67	+17/-14

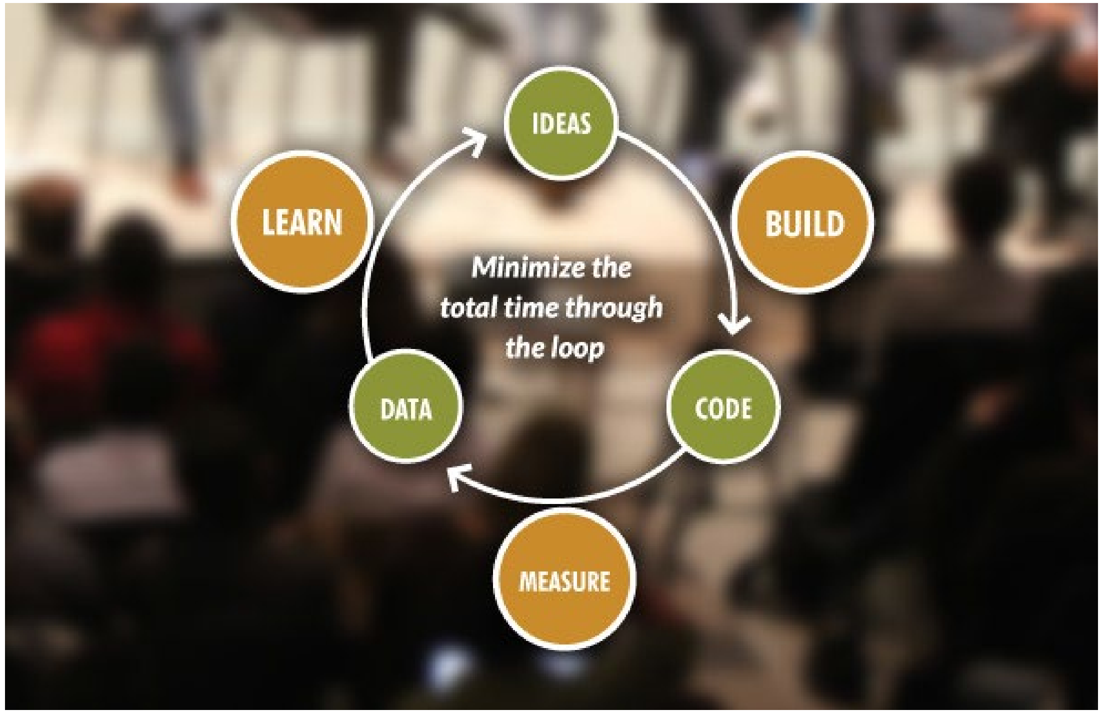
Coding →

Learn More

	Model	Score	95% Confidence
1st	Claude 3.5 Sonnet	1165	+33/-33
2nd	GPT-4 Turbo Preview	1131	+24/-27
3rd	GPT-4o	1125	+28/-27
4	Llama 3.1 405B Instruct	1123	+33/-30
5	Gemini 1.5 Pro (May 2024)	1085	+28/-28
6	Claude 3 Opus	1045	+24/-24
7	Gemini 1.5 Flash Preview	1024	+29/-25
8	Gemini 1.5 Pro (April 2024)	984	+29/-27
9	Claude 3 Sonnet	970	+27/-28
10	Llama 3 70B Instruct	967	+22/-23
11	Mistral Large	908	+24/-25
12	Gemini 1.0 Pro	781	+29/-29

What’s Next?

Monitor and Continue to Innovate (Cautiously and Ethically)



Eric Ries – The Lean Startup

THANK YOU

Ryan Harper, Product Manager
Center for Enterprise Dissemination
U.S. Census Bureau

ryan.harper@census.gov