



YEARLY VISITORS:

JOBS 300 Thousand ADDED:

PROJECT

ROADMAP

Prepare

Synthetic Data

IN LOCAL **ECONOMIC** CONTRIBUTIONS



NO VIRTUAL ASSISTANT **CAPABILTIES**

Synthetic Data

Synthetic queries were developed to represent questions that users may ask in association with five NPS API endpoint.

The team used an 80/20 split to create test & validation data.

were developed for evaluating the models to prevent data leakage.

Separate queries Queries

Model **Evaluation**

Evaluation methodology

National Park Service: Park Pal 🐻 You can ask questions about parks, amenities, events, fees, and more Type 'exit' to end the chat. . How can I help you? Where can I find Zion National : Zion National Park is located at Zion National Park 1 Zion Park Blvd. in Springdale, Utah 84767 What is the description of the **Grand Canyon?** 🐷 : Here is the description of Grand Canyon National Park: Entirely within Northern Arizona, the park encompasses 278 miles (447 km) of the Colorado River and adjacent uplands. Located on ancestral homeland of 11 present day Tribal Communities, Grand Canyon is one of the most spectacular examples of erosion anywhere in the world-a mile deep canyon unmatched in the incomparable vistas it

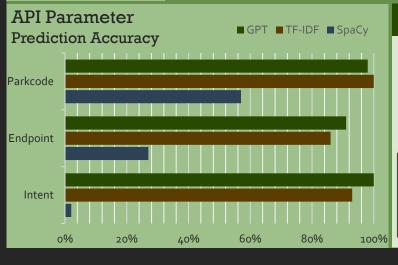
Midwest National Capital

Northeast

Recreational Visits 2023

offers visitors from the north and south rims





Fine-Tuned GPT

The NPS API documentation and URL structure did not lend itself to easy interpretation by typical chatbot models. The team explored fine-tuning GPT models to create the parameters for NPS API calls based on a user query.

OPENAI

Fine-tuning improves on few-shot learning by training on many more examples than can fit in the prompt, letting you achieve better results on a wide number of tasks.

FLAN-T5

2012

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2012

Studying at ABC





YEARLY VISITORS:

JOBS 300 Thousand ADDED:

IN LOCAL **ECONOMIC** CONTRIBUTIONS



NO VIRTUAL ASSISTANT **CAPABILTIES**

PROJECT ROADMA

Prepare Synthetic Data Fine-tune GPT





Synthetic Data

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Model **Evaluation**

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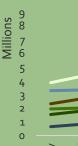
Where can I find Zion National

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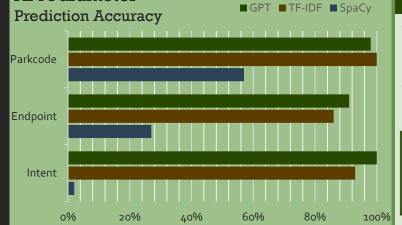
> What is the description of the **Grand Canyon?**

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Recreational Visits 2023



API Parameter



Fine-Tuned GPT

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2012

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Pacific West

Southeast

FLAN-T5





YEARLY VISITORS:

JOBS

ADDED:

PROJECT

ROADMA

PREPARE SYNTHETIC

DATA 🚚

FINE-TUNE FLAN-TS

FINE-TUNE GPT

HOST PARK PAL

STORE WITH S

aws

COMPUTE WITH

300 Million

300 Thousand BILLION ECONOMIC CONTRIBUTIONS

You can ask questions about parks, amenities, events, fees, and more Type 'exit' to end the chat.

National Park Service: Park Pal 🐻

: How can I help you?

Where can I find Zion National

: Zion National Park is located at Zion National Park 1 Zion Park Blvd. in Springdale, Utah 84767

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Type your message he

Synthetic Data

NO VIRTUAL ASSISTANT

CAPABILTIES

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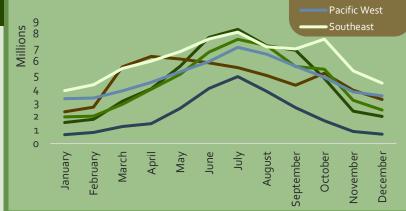
The team used an 80/20 split to create test & validation data. Separate queries

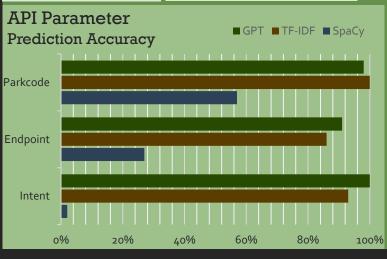
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Model **Evaluation**

Evaluation methodology

Recreational Visits 2023





Fine-Tuned GPT

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66 -

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FLAN-T5

Midwest

Northeast

National Capital

2012

Studying at ABC

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2012

Studying at ABC







https://github.com/ nblakkanesser/MAD S_Capstone



You can ask questions about parks, amenities, events, fees, and more Type 'exit' to end the chat. . How can I help you? Where can I find Zion National

National Park Service: Park Pal 🐻

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Park 1 Zion Park Blvd. in Springdale, Utah 84767

Midwest

National Capital

PROJECT ROADMA PREPARE SYNTHETIC DATA 🚚



Synthetic Data

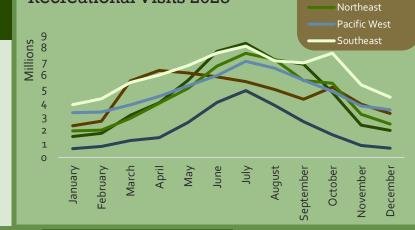
CAPABILTIES

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Recreational Visits 2023



Model **Evaluation**

Evaluation methodology

API Parameter ■ GPT ■ TF-IDF ■ SpaCy **Prediction Accuracy** Parkcode Endpoint Intent 40% 80% 0% 20% 60% 100%

Fine-Tuned GPT

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2012

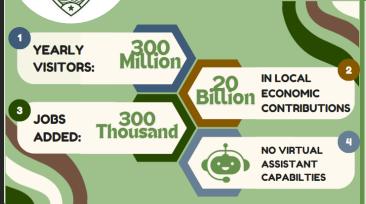
Studying at ABC











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Intermountain

Midwest National Capital

Synthetic Data

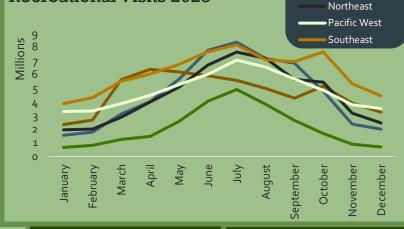
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Separate queries Queries

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Recreational Visits 2023





Evaluation methodology

Top 5 National Parks 2023

PROJECT

FINE-TUNE GPT

HOST PARK PAL

aws

COMPUTE WITH LAMBDA

ROADMA

PREPARE SYNTHETIC

DATA 🚄

Great Smoky Mountains Grand Canyon Zion Yellowstone **Rocky Mountain**

VISITS (MILLIONS)

0

Fine Tuned GPT

The NPS API documentation and URL structure did not lend itself to easy interpretation by typical chatbot models. The team explored fine-tuning GPT models to create the parameters for NPS API calls based on a user query.

15

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SpaCy & NLTK

Studying at ABC

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2012

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S_Capstone









Synthetic Data

ASSISTANT

CAPABILTIES

Synthetic queries were developed to represent questions that users may ask in association with five NPS API endpoint.

The team used an 80/20 split to create test & validation data.
Separate queries

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Model **Evaluation**

Evaluation methodology



Top 5 National Parks 2023

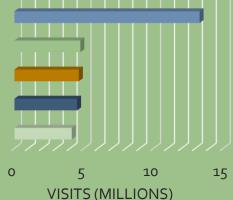


Grand Canyon

Zion

Yellowstone

Rocky Mountain



Fine Tuned GPT

Park: Entirely within Northern Arizona, the park encompasses 278 miles (447 km) of the Colorado

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66

OPENAI

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SpaCy & NLTK

2012

Studying at ABC

Choose Change Graphic from the options.

2012

Studying at ABC







nblakkanesser/MAD **S_Capstone**





Intermountain

Midwest

Synthetic Data

Synthetic queries were developed to represent questions that users may ask n association with five NPS API endpoint.

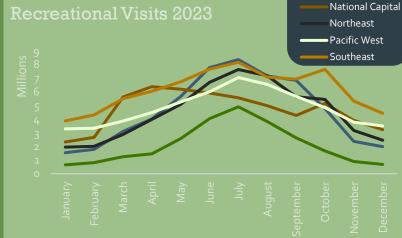
The team used an 80/20 split to create test & validation data. Separate queries Queri

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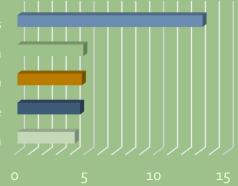
82k Queries

Model **Evaluation**

Evaluation methodology



Top 5 National Parks 2023



VISITS (MILLIONS)

Fine Tuned GPT

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OPENAI

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SpaCy & NLTK

Studying at ABC

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2012

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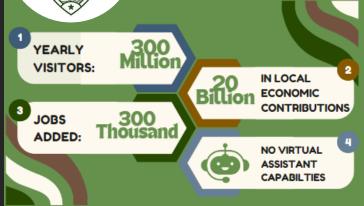


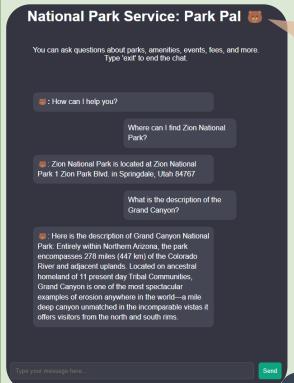




S_Capstone











Intermountain

National Capital

Midwest

Northeast

Pacific West

Synthetic Data **PROJECT** ROADM

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Fine Tuned GPT

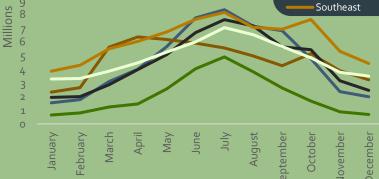
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OPENAL

Fine-tuning improves on few-shot learning by training on many more examples than can fit in the prompt, letting you achieve better results on a wide number of tasks

Recreational Visits 2023





Model **Evaluation**

PREPARE SYNTHETIC

DATA

NLTK & SPACY

FINE-TUNE GPT

HOST PARK PAL

STORE WITH S3

aws

COMPUTE WITH

LAMBDA

Evaluation methodology

SpaCy & NLTK

2012 Studying at ABC

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Top 5 National Parks 2023



VISITS (MILLIONS)







nblakkanesser/MAD S_Capstone





Chat with Park Pal Today!



Intermountain

Midwest

Synthetic Data

Synthetic queries were developed to represent questions that users may ask in association with five NPS API endpoint.

Fine Tuned GPT

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Recreational Visits 2023

National Capital Northeast Pacific West

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OPENAL Fine-tuning improves on few-shot learning by training on many more examples than can fit in the prompt, letting you achieve better results on a wide number of tasks

98 Southeast Millions

Model **Evaluation**

PROJECT

ROADM

PREPARE SYNTHETIC

DATA

NLTK & SPACY

FINE-TUNE GPT

HOST PARK PAL

STORE WITH S3

aws

COMPUTE WITH

LAMBDA

Evaluation methodology

SpaCy & NLTK

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Top 5 National Parks 2023







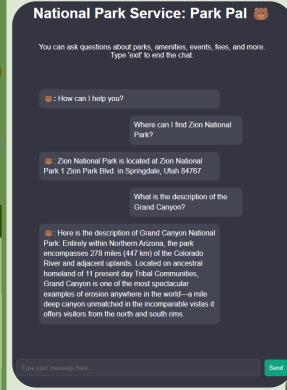
GitHub:

https://github.com/

nblakkanesser/MAD

S Capstone







Intermountain

National Capital

Midwest

Northeast

Chat with

Park Pal

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Recreational Visits 2023



Model **Evaluation**

PROJECT

ROADM

PREPARE SYNTHETIC

DATA

NLTK & SPACY

FINE-TUNE GPT

HOST PARK PAL

STORE WITH S3

aws

COMPUTE WITH

LAMBDA

Evaluation methodology

SpaCy & NLTK

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Choose Change Graphic from the options.

Top 5 National Parks 2023











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GitHub:

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Intermountain

ROADMAP



STORE WITH S3

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Recreational Visits 2023 Northeast Pacific West Southeast Andrew Pacific West Southeast

Model **Evaluation**

LAMBDA

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Top 5 National Parks 2023

