



Park Pal

NPS Chatbot



Collaborators

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YEARLY
VISITORS:

300
Million

JOBS
ADDED:

300
Thousand

20
Billion

IN LOCAL
ECONOMIC
CONTRIBUTIONS



NO VIRTUAL
ASSISTANT
CAPABILITIES

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 Park?

👤: 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 offers visitors from the north and south rims.

Type your message here

Send

Chat with
Park Pal
Today!



PROJECT ROADMAP

1 Prepare
Synthetic Data



Fine-tune GPT 2



3 Host Park Pal



Synthetic Data

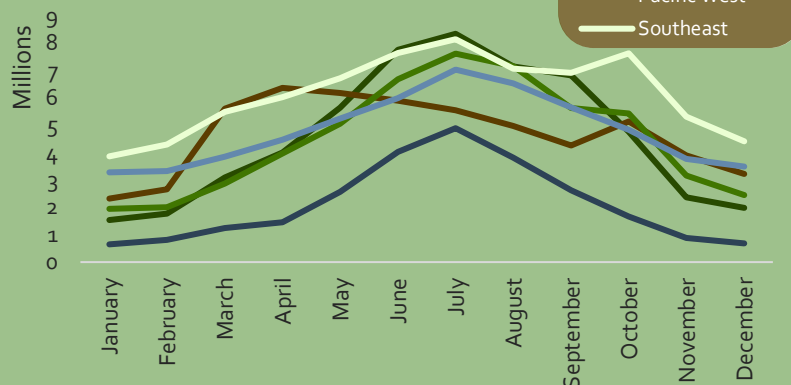
Synthetic queries were developed to represent questions that users may ask in association with five NPS API endpoint. The team used an 80/20 split to create test & validation data. Separate queries were developed for evaluating the models to prevent data leakage.

82k
Queries

Model Evaluation

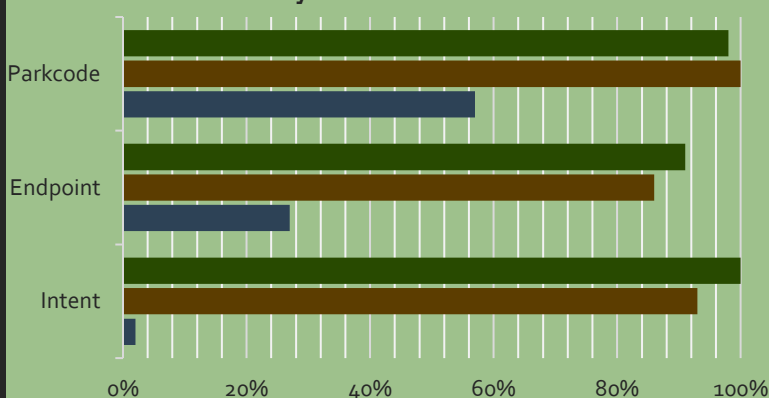
Evaluation methodology

Recreational Visits 2023



API Parameter Prediction Accuracy

■ GPT ■ TF-IDF ■ SpaCy



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.

”

LangChain

2012

Studying at ABC

Choose Change Graphic from the options.

2012

Studying at ABC

Choose Change Graphic from the options.