

TruEra Challenge: Build LLM Applications
with Google Cloud Vertex AI

SimplifAI

SimplifAI

Easier text for universal accessibility and inclusion



lab
lab.
ai

Target market

SimplifAI

243M 

WITH
LEARNING
DISABILITIES



1.5B 

ENGLISH
LEARNERS

Problem

SimplifAI

20K 

**IN SIMPLE
ENGLISH
WIKIPEDIA***

VS

6M 

**IN ENGLISH
WIKIPEDIA***

Solution

SimplifAI

DATA

- pszemraj/simple_wikipedia_LM
- wikipedia "20220301.en"
- wikipedia "20220301.simple"

TEXT GENERATION



LLAMA2
&
PALM2
(versions)

- Finetuning
- Prompt-engineering



Simple

EVALUATION



Simple

- Blue score
- Language Matching
- Perplexity
- Simplicity score (custom)
- Syntactic score (custom)
- Toxicity



Simple

OBSERVABILITY

CLASSIFIER



+ INTEGRATED GRADIENTS



complex / simple



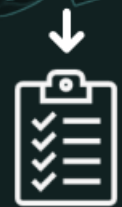
Observability



Further questions

RAG

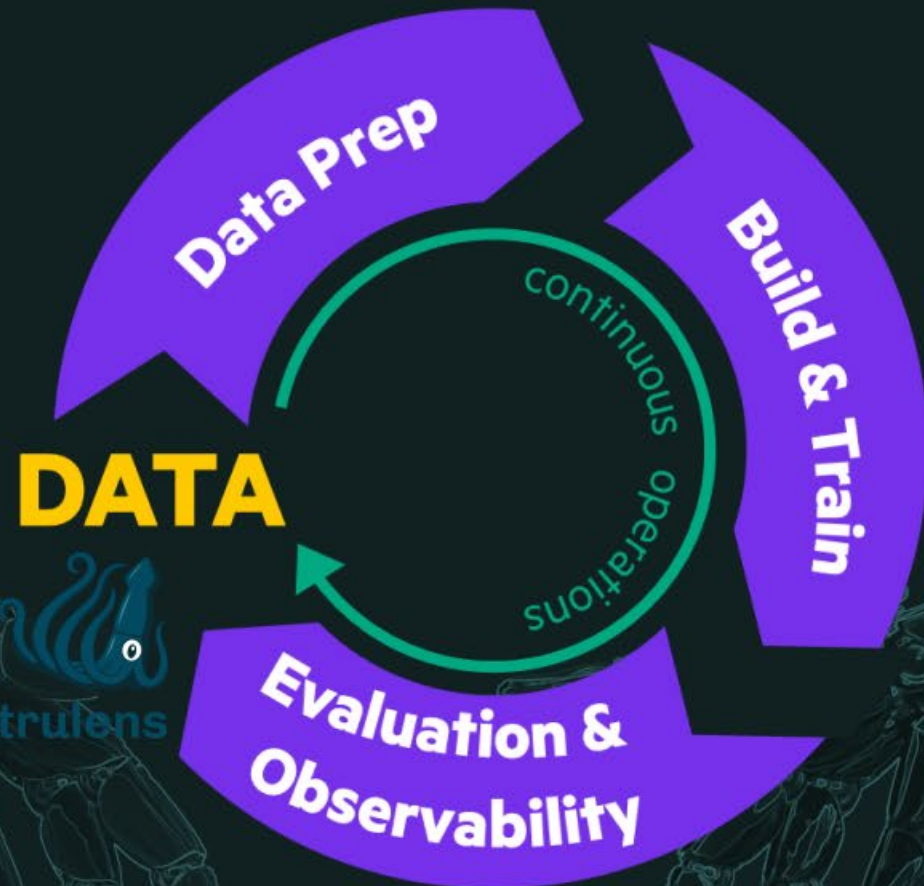
KNOWLEDGE BASE



Answers

Process

SimplifAI



Dataset creation



Hugging Face dataset



20K
IN SIMPLE
ENGLISH
WIKIPEDIA*

VS

6M
IN ENGLISH
WIKIPEDIA*

Fine-tuning

Models used:

- LLAMA2 (7B & 13B)
- BISON (Base & 32K)

2 training steps



Vertex AI

Results

Problems

- Open Source
- Non-supervised
- No content validation

Models discarded

Model

Text-Bison-32K



Vertex AI



Prompt-engineering

Context:

- Simple English Wikipedia definition
- Goal: Clear and concise information
- Instruction: transform input to simple English format
- Requirements




Results

Successful simple English text






truLens
×

Leaderboard

Apps

Evaluations

Progress

truLens_eval 0.18.3

App Leaderboard

Average feedback values displayed in the range from 0 (worst) to 1 (best).

simplifAI-app-v4 [Ⓢ]

| Records | Average Latency (Se... | Total Cost (USD) | Total Tokens | is_simpler | perplexity | pron_subjects_ratio | bleu | Select App |
|---------|------------------------|------------------|--------------|---|--|--|---|------------|
| 9 | 2.33 | \$0 | 0 | 0.78 ▲ medium | 23.41 ✔ high | 0.39 ● low | 0.69 ▲ medium | |

simplifAI-app-v5 [Ⓢ]

| Records | Average Latency (... | Total Cost (USD) | Total Tokens | is_simpler | perplexity | language_match | pron_subjects_ratio | bleu | Select App |
|---------|----------------------|------------------|--------------|---|--|---|---|---|------------|
| 9 | 2.33 | \$0 | 0 | 0.78 ▲ medium | 23.55 ✔ high | 0.99 ✔ high | 0.79 ▲ medium | 0.79 ▲ medium | |

simplify-app-v1 [Ⓢ]

| Records | Average Latency (Se... | Total Cost (USD) | Total Tokens | is_simpler | perplexity | pron_subjects_ratio | bleu | Select App |
|---------|------------------------|------------------|--------------|--|--|---|---|------------|
| 9 | 2.33 | \$0 | 0 | 0.22 ● low | 23.31 ✔ high | 0.62 ▲ medium | 0.79 ▲ medium | |



Evaluations

Filter Applications

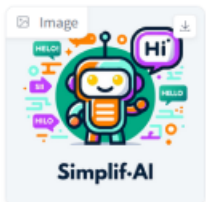
simplifAI-app-v5 x

simplifAI-app-v5

Records Feedback Functions

| App ID | App Type | User Input | Response | tags | Time Stamp ↓ | is_simpler | pron_subject |
|------------------|------------------------------|-----------------------------------|----------------------------------|------|----------------------------|------------|--------------|
| simplifAI-app-v5 | TruWrapperApp(trulens_eva... | "Then Allison walks into the ... | "Then Allison enters the kitc... | - | 2023-12-08T13:02:10.006388 | 1 | 0.7394 |
| simplifAI-app-v5 | TruWrapperApp(trulens_eva... | "By contrast, a multiple-cam... | "In contrast, a multiple-cam... | - | 2023-12-08T13:02:06.074342 | 1 | 0.7325 |
| simplifAI-app-v5 | TruWrapperApp(trulens_eva... | "As he had previously writte... | "Because he had written for ... | - | 2023-12-08T13:02:02.085751 | 1 | 0.7316 |
| simplifAI-app-v5 | TruWrapperApp(trulens_eva... | "From Academy Award® win... | "In the year 2154, a former M... | - | 2023-12-08T13:01:55.911742 | 1 | 0.8444 |
| simplifAI-app-v5 | TruWrapperApp(trulens_eva... | "Francesco Bagnaia successf... | "Francesco Bagnaia won the ... | - | 2023-12-08T13:01:51.005838 | 1 | 0.8646 |
| simplifAI-app-v5 | TruWrapperApp(trulens_eva... | "A federal grand jury charge... | "Hunter Biden, the son of Pr... | - | 2023-12-08T13:01:44.986187 | 1 | 0.8457 |
| simplifAI-app-v5 | TruWrapperApp(trulens_eva... | "A diplomatic crisis is unfold... | "Guyana and Venezuela are ... | - | 2023-12-08T13:01:40.280873 | 1 | 0.7438 |
| simplifAI-app-v5 | TruWrapperApp(trulens_eva... | "The dominant sequence tra... | "The most common sequenc... | - | 2023-12-08T13:01:36.535623 | 0 | 0.8433 |
| simplifAI-app-v5 | TruWrapperApp(trulens_eva... | "The capybara or greater ca... | "The capybara is a big roden... | - | 2023-12-08T13:01:32.518981 | 0 | 0.772 |

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Simplif AI   

Input About the App TruLens Metrics **Observability**

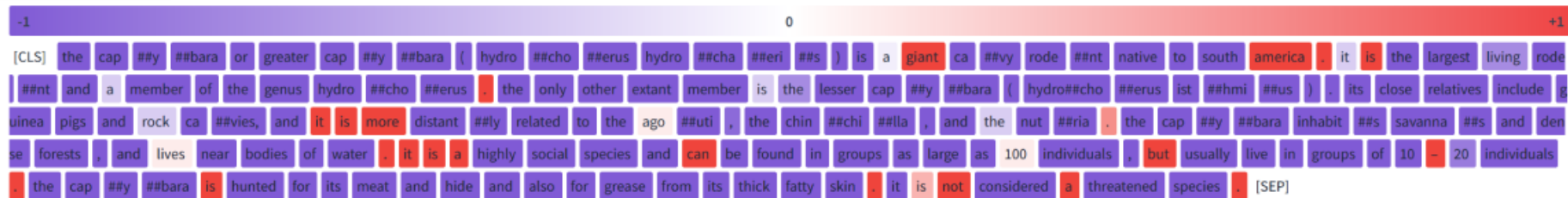
Visualization of Attribution for Complexity by token. Generated using TruLen Explainability's implementation of Integrated Gradients.

Textbox

The capybara or greater capybara (*Hydrochoerus hydrochaeris*) is a giant cavy rodent native to South America. It is the largest living rodent and a member of the genus *Hydrochoerus*. The only other extant member is the lesser capybara (*Hydrochoerus isthmius*). Its close relatives include guinea pigs and rock cavy, and it is more distantly related to the agouti, the chinchilla, and the nutria. The capybara inhabits savannas and dense forests, and lives near bodies of water. It is a highly social species and can be found in groups as large as 100 individuals, but usually live in groups of 10–20 individuals. The capybara is hunted for its meat and hide and also for grease from its thick fatty skin. It is not considered a threatened species.

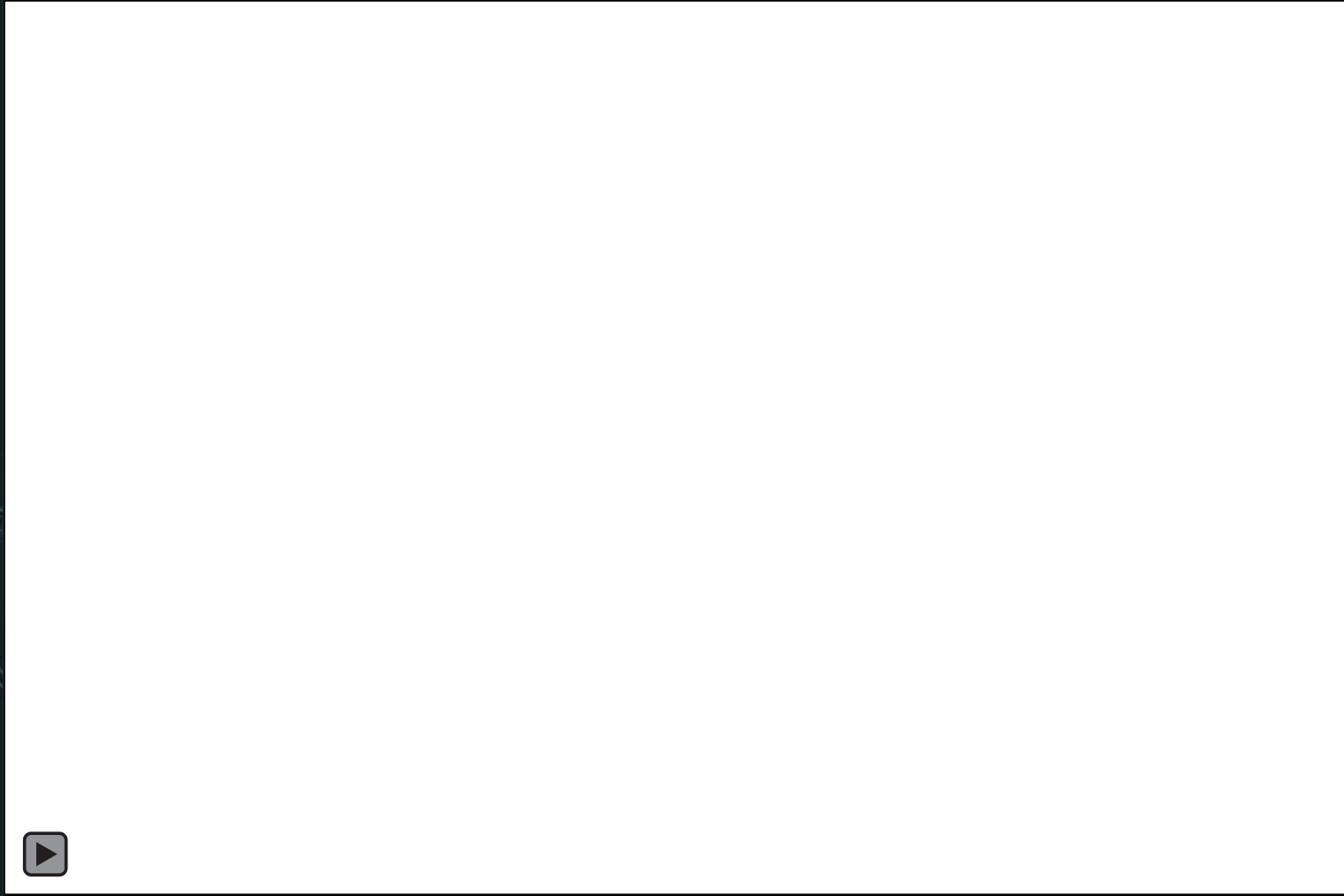
Submit

COMPLEXITY ATTRIBUTION



Demo example

SimplifAI



Next steps

SimplifAI

RAG



Further questions

KNOWLEDGE BASE



Answers



EXTENSION



Team

SimplifAI



thank you

