Part 1: Alt-Text PyPi Package

A Python package capable of...
- Fetching and assigning data from images in HTML documents.
- Generating alt-text for images.

Super easy-to-use...
- Documentation for all functions
- Generate alt-text for all images in one document in just five (5) lines of code!

Out-of-the-box support for popular technologies and services...
- Replicate (Giving access to Blip, MiniGPT4, and more!)
- OpenAI (Giving access to GPT-3.5 Turbo, GPT-4.0, etc.)
- Google's VertexAI (Image captioning)
- Tesseract OCR (Optical Character Recognition)
- PrivateGPT (Llama2)

Part 2: Alt-Text API

A Web API capable of...
- The same functionality as the PyPi package.
- Integrating with any web capable technology.
- Storing intermediate and final generated alt-text results.

Super easy-to-use...
- Uses REST format
- Documented using OpenAPI standards
- Generates alt-text for all images in a document in just two (2) requests!

The Problem
Alternative text (aka alt-text) is used to make web pages and ebooks more accessible. Alt-text describes what an image shows for users who cannot see the image. However, alt-text isn’t always implemented when images are present.

The Client - Project Gutenberg
A volunteer effort dedicated to digitizing and distributing public domain works. They have a database of over 70,000 ebooks for anyone to access. The issue is, roughly 470,000* images in those ebooks lack alt-text making them inaccessible to visually impaired users.

*Not including images with bad alt-text entries

The Goal
Our goal is to develop a software solution using current AI technologies, such as machine vision and large language models, to assist in creating alt-text for ebooks.

Images in HTML
<img src="url" alt="alternatetext">

The Problem
- Often repeat captions and/or surrounding text
- Mostly simply shorten the generated description.

Findings
- Refined Description Preference
  - None
  - VertexAI
  - Blip
  - Blip-2
  - Llava-13b
  - MiniGPT4
  - Web-Local
  - Clip-Interrogator

- Cost: $0.000225/sec
- Median: 1.39
- Mean: 1.53

- Cost: $0.000725/sec
- Median: 24.99
- Mean: 32.84

- Cost: $0.00115/sec
- Median: 3.50
- Mean: 4.13

- Cost: FREE
- Median: 58.0
- Mean: 3.90

- Cost: $0.00115/sec
- Median: 17.88
- Mean: 17.93

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