**Embeddings**

Ensure the openai.env file is already created which has the Secret Key

1. Make a Call to the openAI for the embeddings

A white background with text and colored dots

Description automatically generated with medium confidence

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| from openai import OpenAI  from dotenv import load\_dotenv  import os  load\_dotenv('openai.env')  # Access the environment variables from the .env file  api\_key = os.environ.get('OPENAI\_API\_KEY')  from openai import OpenAI  client = OpenAI()  response = client.embeddings.create(      input="cat",      model="text-embedding-3-small"  )  print(response.data[0].embedding) |

**Reduce the dimensions : take input as cat / kitten / dog**

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| from openai import OpenAI  from dotenv import load\_dotenv  import numpy as np  import os  load\_dotenv('openai.env')  # Access the environment variables from the .env file  api\_key = os.environ.get('OPENAI\_API\_KEY')  from openai import OpenAI  client = OpenAI()  def normalize\_l2(x):  x = np.array(x)  if x.ndim == 1:  norm = np.linalg.norm(x)  if norm == 0:  return x  return x / norm  else:  norm = np.linalg.norm(x, 2, axis=1, keepdims=True)  return np.where(norm == 0, x, x / norm)  response = client.embeddings.create(  input="cat",  model="text-embedding-3-small"  )  cut\_dim = response.data[0].embedding[:7]  norm\_dim = normalize\_l2(cut\_dim)  print(norm\_dim) |

Cat: 0.39621669 -0.36389091 -0.24975737 0.61148116 0.32560559 -0.40921926 0.02878169

Kitten : -0.10221359 -0.8309309 -0.25617958 -0.21320752 0.30225059 -0.29130099 -0.1086697

Dog: 0.55276617 -0.20203363 -0.04715005 0.78472572 -0.07780755 -0.15907323 -0.06523864