

Translation in the 21st C.: Human Language Translators + AI

Bruce D. Marron

February 24, 2025



**Is AI a threat to human language
translators?**

The answer is perhaps...but let's investigate!

What is AI afterall?

Artificial Intelligence (AI) and Machine Learning (ML)

Artificial intelligence: the general ability of computers to emulate human thought and perform tasks in real-world environments.

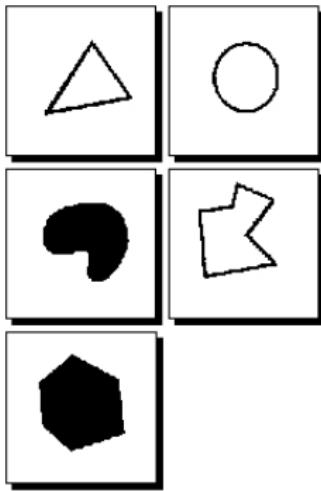
Machine learning: the technologies and algorithms that enable systems to identify and recognize patterns, make decisions, and improve themselves through experience and data.

-

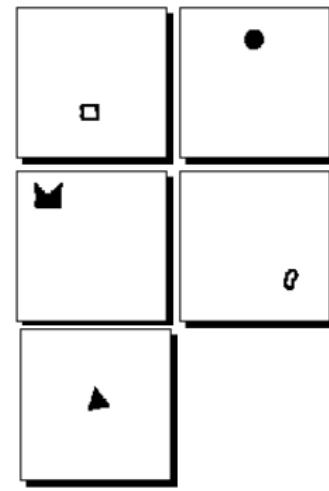
Machine learning is a pathway to artificial intelligence.

Machine Learning (ML)

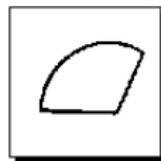
Training Examples: Class 1



Training Examples: Class 2



Test example: Class = ?



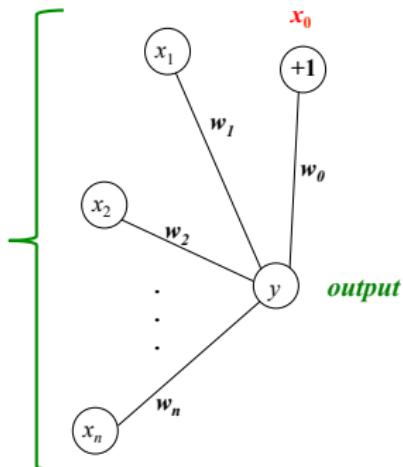
Machine Learning (ML)

Perceptrons as simplified “neurons”

w_0 is called the “**bias**”

$-w_0$ is called the “**threshold**”

input



Input is $(x_1, x_2, \dots x_n)$

Weights are $(w_1, w_2, \dots w_n)$

Output y is $+1$ (“the neuron fires”) if the sum of the inputs times the weights is greater or equal to the threshold:

If $w_1x_1 + w_2x_2 + \dots + w_nx_n > \text{threshold}$
then $y = 1$, else $y = -1$

If $w_1x_1 + w_2x_2 + \dots + w_nx_n > -w_0$
then $y = 1$, else $y = -1$

If $w_0 + w_1x_1 + w_2x_2 + \dots + w_nx_n > 0$
then $y = 1$, else $y = -1$

If $w_0x_0 + w_1x_1 + w_2x_2 + \dots + w_nx_n > 0$
then $y = 1$, else $y = -1$

A Few Definitions

Acronyms in AI Translation

LLM	Large Language Model
NMT	Neural Machine Translation [Google]
GPT	Generative Pre-trained Transformer [OpenAI]
API	Application Programming Interface
SDK	Software Development Kit
IDE	Integrated Development Environment
MIME	Multipurpose Internet Mail Extension; type of file format

Public AI Translators (free with limitations)

Google Translator - Simple Prose

I love going to school! It's such a challenging environment.

↔ **español** inglés francés ▾

¡Me encanta ir a la escuela! Es un entorno muy desafiante.

Google Translator - Poetry

“For what is it to die but to stand naked in the wind and to melt into the sun? And when the earth shall claim your limbs, then shall you truly dance.” (Kahlil Gibran, artist and poet)

⇒ [español](#) [inglés](#) [francés](#) ▾

"¿Qué es morir sino permanecer desnudo en el viento y fundirse con el sol? Y cuando la tierra reclame tus miembros, entonces podrás bailar de verdad".

Google Translator - Science Text

The Anthropocene is a proposed new geological epoch based on the observation that human impacts on essential planetary processes have become so profound that they have driven the Earth out of the Holocene epoch in which agriculture, sedentary communities, and eventually, socially and technologically complex human societies developed. The formalization of the Anthropocene as a new geological epoch is being considered by the stratigraphic community, but regardless of the outcome of that process, it is becoming apparent that Anthropocene conditions transgress Holocene conditions in several respects. The knowledge that human activity now rivals geological forces in influencing the trajectory of the Earth System has important implications for both Earth System science and societal decision making. [Steffen et. al. (2018) Trajectories of the Earth System in the Anthropocene, *PNAS*]

Google Translator - Science Text

← español inglés francés ↘

El Antropoceno es una nueva época geológica propuesta que se basa en la observación de que los impactos humanos en los procesos planetarios esenciales se han vuelto tan profundos que han hecho que la Tierra salga de la época del Holoceno, en la que se desarrollaron la agricultura, las comunidades sedentarias y, finalmente, las sociedades humanas social y tecnológicamente complejas. La comunidad estratigráfica está considerando la formalización del Antropoceno como una nueva época geológica, pero independientemente del resultado de ese proceso, se está volviendo evidente que las condiciones del Antropoceno transgreden las condiciones del Holoceno en varios aspectos. El conocimiento de que la actividad humana ahora rivaliza con las fuerzas geológicas en la influencia de la trayectoria del Sistema Tierra tiene implicaciones importantes tanto para la ciencia del Sistema Tierra como para la toma de decisiones sociales.



Google Translator - Legal Text

La Secretaría del Trabajo y Previsión Social deberá pronunciarse respecto de la solicitud de registro dentro de los veinte días posteriores a la recepción de la misma, de no hacerlo, los solicitantes podrán requerirla para que dicte la resolución correspondiente, dentro de los tres días siguientes a la presentación del requerimiento. Transcurrido dicho plazo sin que se notifique la resolución, se tendrá por efectuado el registro para los efectos legales a que dé lugar. [Artículo 15. LEY FEDERAL DEL TRABAJO, publicada 30-09-2024]

Google Translator - Legal Text



español

inglés

francés



The Ministry of Labor and Social Welfare must decide on the registration request within twenty days of receiving it. If it fails to do so, the applicants may request that it issue the corresponding resolution within three days of submitting the request. After this period has elapsed without notification of the resolution, the registration will be deemed to have been made for the legal purposes to which it gives rise.

The Ministry of Labor and Social Welfare (MLSW) must approve or reject the registration request within twenty days after its receipt in the offices of the MLSW. If the MLSW fails to do so, the applicants may formally require that the MLSW resolve the issue within three business days. If, after this second period has elapsed without notification of the status of the registration request, the registration request will be deemed approved for all applicable legal purposes.
[Marron translation]

ChatGPT - Legal Text

ChatGPT ▾

↑ Sh

Translate the following text from Spanish to English as a professional translator

< 2/2 >



Please provide the text you'd like me to translate, and I'll deliver a professional-quality translation for you!



The Ministry of Labor and Social Welfare must issue a decision regarding the registration request within twenty days of receiving it. If it fails to do so, the applicants may formally request that the corresponding resolution be issued within three days following the submission of such a request. If this period elapses without notification of the resolution, the registration will be considered completed for all applicable legal purposes.

Registered User AI Translators (pay per limit)

OpenAI API: GPT-4o

GPT-4o: A type of foundational LLM that can generate content in over 90 languages. Multiple types of rate limits apply.

"We're running GPT4 translations on english, german, french, spanish, italian, portugese, on a daily basis, and I can assure you it's the best available option hands down."

"...the talk of the town with its very impressive language translation technology that's taking multilingual communication by storm. GPT-4 has the remarkable ability to analyze the context and meaning of words and sentences, which makes it able to make more accurate translations"

"...it generates text 2x faster and is 50% cheaper. Additionally, GPT-4o has the best vision and performance across non-English languages of any of our models. **GPT-4o is available in the OpenAI API to paying customers.**"

Access to GPT-4o API

Once you have applied for access, you must be reviewed and approved...

Once your application has been approved, you will receive an API key ...

Once you have gained access to the API, you will need to install the necessary SDK (using an IDE)

Once you have configured GPT-4 for your project, you need to initialize GPT-4 for translation....

And now you will be ready to start using the model for language translation.

Yikes!

Google Cloud Translation API

This API uses a pre-trained, custom model or a translation specialized large language model (LLMs). You can choose from different models based on your needs, such as:

Neural Machine Translation (NMT): For general text, like website content or news articles. Available in 194 languages!

Translation Large Language Model (LLM): For conversational text, like messages or social media posts

AutoML Translation: For highly specialized or technical content

NB. Google Translate uses sequence-to-sequence models. These models also are used in voice-activated gadgets, and online chatbots.

AI vs. Human Translators: The Science

GPT-4 vs. Human Translators: A Comprehensive Evaluation of Translation Quality Across Languages, Domains, and Expertise Levels

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⁶ Institute of Advanced Technology, Westlake Institute for Advanced Study

To our knowledge, **this study is the first to evaluate LLMs against human translators** and analyze the systematic differences between their outputs, providing valuable insights into the current state of LLM-based translation and its potential limitations.

GPT-4 vs. Human Translators: A Comprehensive Evaluation of Translation Quality Across Languages, Domains, and Expertise Levels

ABSTRACT This study comprehensively evaluates the translation quality of Large Language Models (LLMs), specifically GPT-4, against human translators of varying expertise levels across multiple language pairs and domains... we find that **GPT-4 performs comparably to junior translators in terms of total errors made but lags behind medium and senior translators....[we] find that GPT-4 translator suffers from literal translations, but human translators sometimes overthink the background information.**

GPT-4 vs. Human Translators: A Comprehensive Evaluation of Translation Quality Across Languages, Domains, and Expertise Levels

CONCLUSION ... GPT-4 has made significant strides in approaching human-level translation quality...This suggests promising opportunities for collaboration and enhancement of translation workflows...we anticipate that **LLMs will become increasingly valuable tools in the translation industry, working alongside human translators to improve productivity, efficiency, and overall translation quality.**

Natural Language Translation in the 21st C.

Is AI a Threat to Human Language Translators?

Perhaps, but unlikely unless folks are unprepared.

-

What is likely is that professional translators will increasingly be required to interface with LLMs through subscription-based APIs. This means adding machine language coding to your tool kit.

Using Google Cloud Translate API

Not trivial!!

My Adventures with Google Translate API: google-cloud-sdk and google-cloud-translate

The screenshot shows the Google Cloud Console interface. At the top, there's a navigation bar with links like Gmail, 4G CPE, OnPoint, Bank of America, SSA, SAT, Mi Telcel, WhatsApp, Google_Cloud, UTECA_MSOffice, UTECA_Teams, and Other Bookmarks. A banner at the top indicates a free trial status of \$6,195.58 credit and 74 days remaining, with options to DISMISS or ACTIVATE.

The main content area features a "Welcome, Bruce Marron" message with a blue and green circular icon. It displays information about a free trial: "\$24 out of \$6,220 credits used" and "Expires March 24, 2025". There are links to "What happens when trial ends?", "Activate full account", and "Add people to your project".

On the right, it shows the project details: "You're working on project [My Project-UTECA1](#) ⓘ", "Number: 735387290281", "ID: my-project-uteca1", and links to "Set up budget alerts" and "Review product spend".

A callout box on the right encourages trying the Gemini 1.5 Pro model, with a "Try Gemini" button and a "→" arrow.

At the bottom, there are links for "Navigation Console" and "History".

My Adventures with Google Translate API: google-cloud-sdk and google-cloud-translate

The screenshot shows a Python IDE interface with the following details:

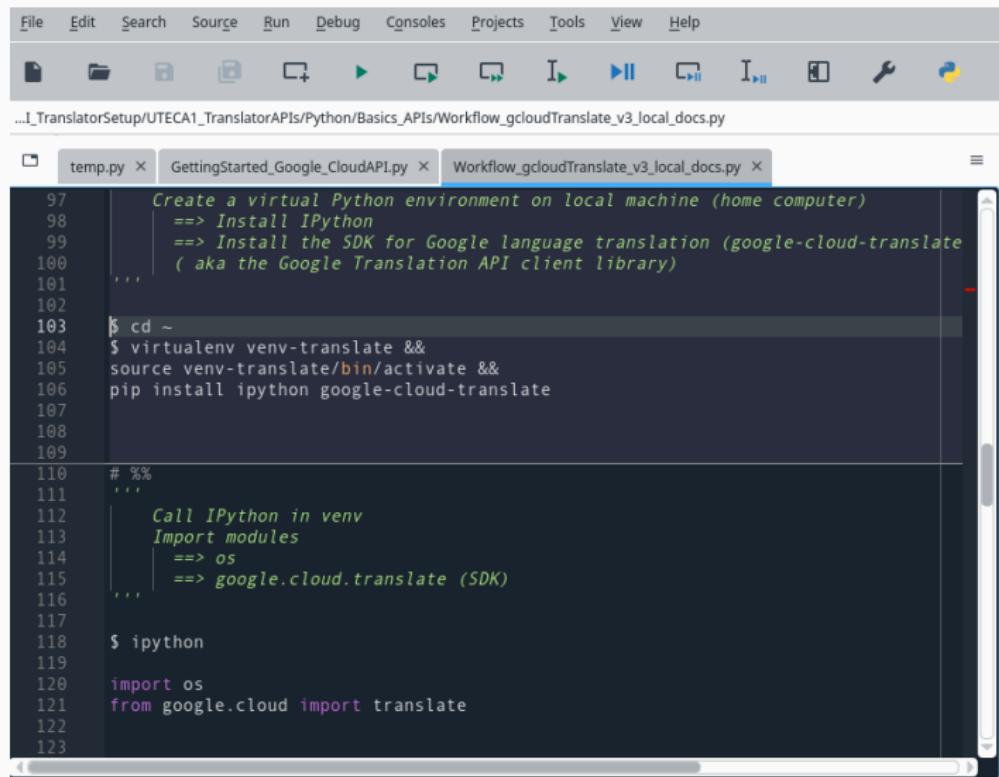
- Menu Bar:** File, Edit, Search, Source, Run, Debug, Consoles, Projects, Tools, View, Help.
- Toolbar:** Standard file operations (New, Open, Save, etc.) and a search bar.
- Path Bar:** /home/bmarron
- Editor Tabs:** temp.py (active), GettingStarted_Google_CloudAPI.py, Workflow_gcloudTranslate_v3_local_docs.py
- Code Content:** A script with numbered comments and URLs pointing to Google Cloud documentation. The URLs include:
 - Line 59: [References for Google Cloud Translation API with Python](#)
 - Line 62: [# Google Account](#)
 - Line 63: <https://cloud.google.com/iam/docs/service-accounts-create>
 - Line 66: [# Install Google Cloud SDK \(or CLI\)](#)
 - Line 67: <https://cloud.google.com/sdk/docs/initializing>
 - Line 68: <https://stackoverflow.com/questions/71086225/how-to-install-or-uninstall-gcloud>
 - Line 70: [# Service Account \(not used\)](#)
 - Line 71: <https://cloud.google.com/iam/docs/service-account-overview>
 - Line 73: [# Google Authentication and Application Default Credentials \(ADC\)](#)
 - Line 74: <https://cloud.google.com/docs/authentication>
 - Line 75: <https://cloud.google.com/docs/authentication/set-up-adc-local-dev-environment>
 - Line 76: <https://cloud.google.com/docs/authentication/application-default-credentials#pers>
 - Line 77: <https://cloud.google.com/docs/authentication/set-up-adc-local-dev-environment>
 - Line 78: <https://cloud.google.com/docs/authentication/provide-credentials-adc>
 - Line 79: <https://cloud.google.com/docs/authentication/provide-credentials-adc#how-to>
 - Line 80: <https://cloud.google.com/docs/authentication/application-default-credentials>
 - Line 81: <https://stackoverflow.com/questions/51554341/google-auth-exceptions-defaultcreden>
 - Line 82: <https://stackoverflow.com/questions/49032678/where-are-google-application-default>
 - Line 83: <https://medium.com/datamindedbe/application-default-credentials-477879e31cb5>
- Right Panel:** Shows a 3D coordinate system icon (x, y, z axes) and a message: "No variables to show". Below it, a note says: "Run code in the Editor or IPython console to see any global variables listed here for exploration and editing." The panel includes tabs for Help, Variable Explorer, Debugger, Plots, and Files.
- Bottom Panel:** A terminal window titled "Console 1/A" with the following text:
 - Type "copyright", "credits" or "license" for more information.
 - IPython 8.30.0 -- An enhanced Interactive Python.
 - Type '?' for help.

My Adventures with Google Translate API: google-cloud-sdk and google-cloud-translate

The screenshot shows the Spyder Python IDE interface. The menu bar includes File, Edit, Search, Source, Run, Debug, Consoles, Projects, Tools, View, and Help. Below the menu is a toolbar with various icons for file operations like Open, Save, Copy, Paste, and Run. The main workspace shows three tabs open: 'temp.py' (selected), 'GettingStarted_Google_CloudAPI.py', and 'Workflow_gcloudTranslate_v3_local_docs.py'. The code in 'temp.py' is as follows:

```
1 #!/usr/bin/env python3
2 # -*- coding: utf-8 -*-
3 """
4 Created on Mon Jan 06 2025
5 @author: bmarron
6
7 source: translate_v3beta1_translate_document.py
8 """
9
10 # %%
11
12 # [BEGIN Workflow_gcloudTranslate_v3_fr-compu.docs]
13 # ==> Preliminaries
14
15 # %%
16
17 '''
18 Login to Google Cloud account (marron.bruce.mx@gmail.com)
19 Activate Cloud Shell
20 Check account status and exit
21 ...
22 https://console.cloud.google.com/
23
24 Project name
25 | My Project-UTECA1
26 Project number
27 | 735387290281
```

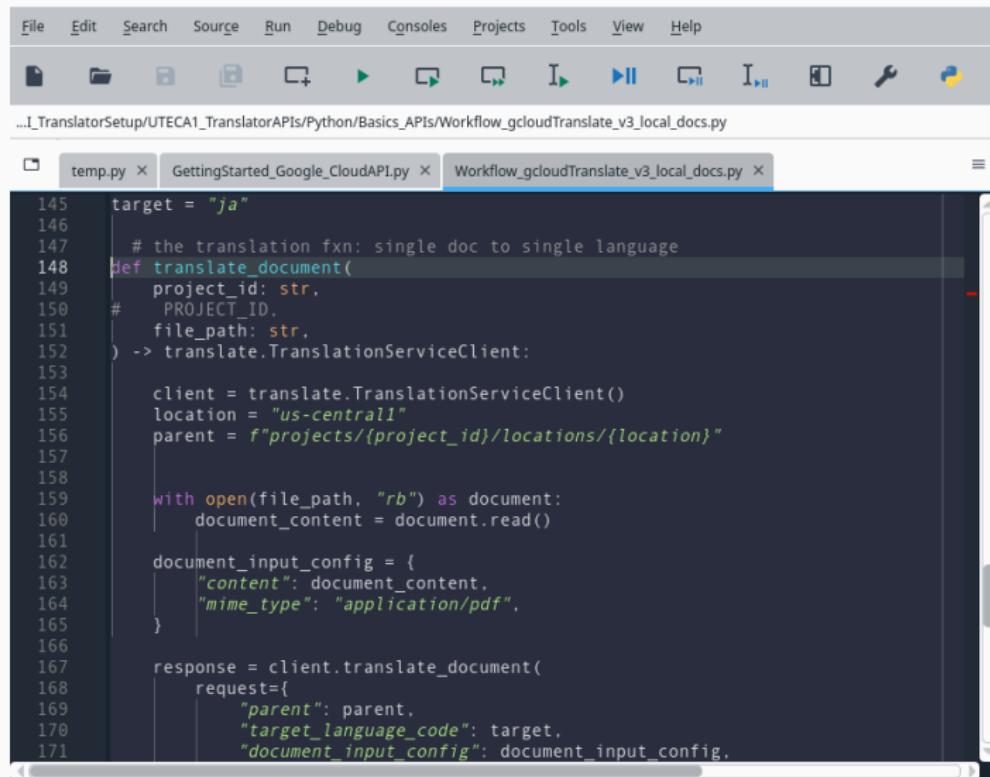
My Adventures with Google Translate API: google-cloud-sdk and google-cloud-translate



The screenshot shows a code editor interface with a dark theme. The menu bar includes File, Edit, Search, Source, Run, Debug, Consoles, Projects, Tools, View, and Help. The toolbar contains icons for file operations like Open, Save, Copy, Paste, and Run. The current file path is displayed as "..._TranslatorSetup/UTECA1_TranslatorAPIs/Python/Basics_APIs/Workflow_gcloudTranslate_v3_local_docs.py". Three tabs are visible: temp.py (selected), GettingStarted_Google_CloudAPI.py, and Workflow_gcloudTranslate_v3_local_docs.py. The code in the temp.py tab is as follows:

```
97     Create a virtual Python environment on local machine (home computer)
98     ==> Install IPython
99     ==> Install the SDK for Google language translation (google-cloud-translate
100    ( aka the Google Translation API client library)
101    ...
102
103    # cd ~
104    $ virtualenv venv-translate &&
105    source venv-translate/bin/activate &&
106    pip install ipython google-cloud-translate
107
108
109
110   # %%
111   ''
112   | Call IPython in venv
113   | Import modules
114   | ==> os
115   | ==> google.cloud.translate (SDK)
116
117
118   $ ipython
119
120   import os
121   from google.cloud import translate
122
123
```

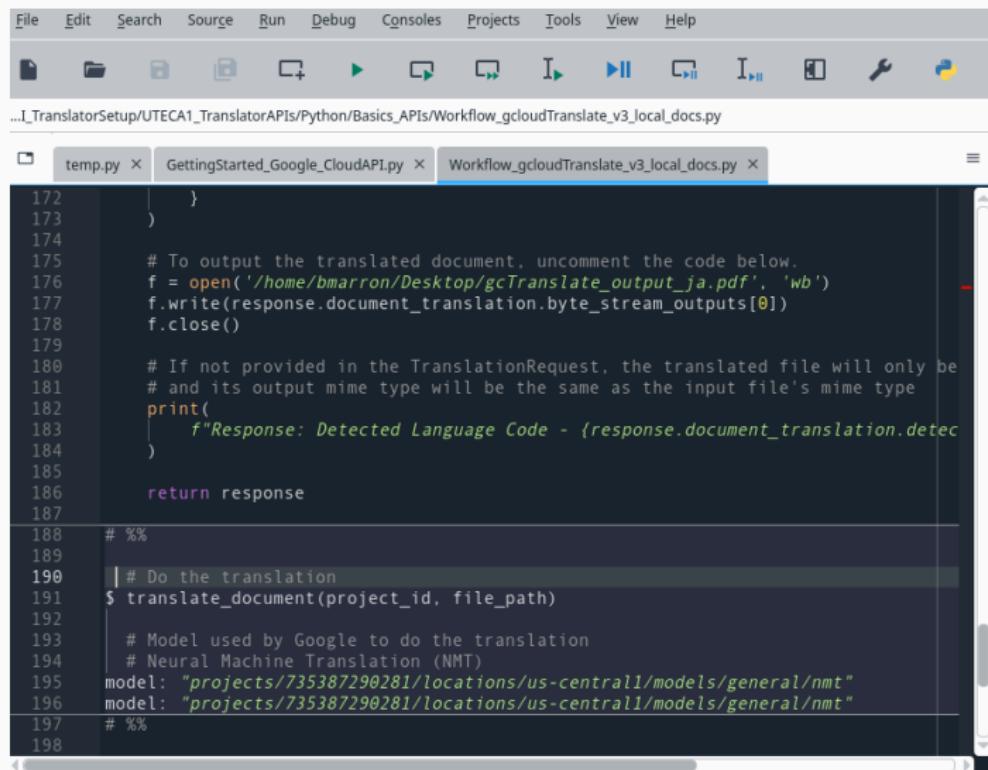
My Adventures with Google Translate API: google-cloud-sdk and google-cloud-translate



The screenshot shows a code editor interface with a dark theme. The menu bar includes File, Edit, Search, Source, Run, Debug, Consoles, Projects, Tools, View, and Help. Below the menu is a toolbar with icons for file operations like Open, Save, Copy, Paste, and Run. The current file path is shown as ...I_TranslatorSetup/UTECA1_TranslatorAPIs/Python/Basics_APIs/Workflow_gcloudTranslate_v3_local_docs.py. The code editor has three tabs: temp.py (selected), GettingStarted_Google_CloudAPI.py, and Workflow_gcloudTranslate_v3_local_docs.py. The Workflow_gcloudTranslate_v3_local_docs.py tab contains the following Python code:

```
145     target = "ja"
146
147     # the translation fxn: single doc to single language
148     def translate_document(
149         project_id: str,
150         # PROJECT_ID,
151         file_path: str,
152     ) -> translate.TranslationServiceClient:
153
154         client = translate.TranslationServiceClient()
155         location = "us-central1"
156         parent = f"projects/{project_id}/locations/{location}"
157
158
159         with open(file_path, "rb") as document:
160             document_content = document.read()
161
162             document_input_config = {
163                 "content": document_content,
164                 "mime_type": "application/pdf",
165             }
166
167             response = client.translate_document(
168                 request={
169                     "parent": parent,
170                     "target_language_code": target,
171                     "document_input_config": document_input_config,
172             }
```

My Adventures with Google Translate API: google-cloud-sdk and google-cloud-translate



The screenshot shows a code editor interface with a dark theme. At the top is a menu bar with File, Edit, Search, Source, Run, Debug, Consoles, Projects, Tools, View, Help. Below the menu is a toolbar with icons for file operations like Open, Save, Copy, Paste, and Run. The main area shows three tabs: temp.py (closed), GettingStarted_Google_CloudAPI.py (closed), and Workflow_gcloudTranslate_v3_local_docs.py (selected). The selected tab contains Python code for interacting with the Google Cloud Translation API. The code includes imports, function definitions, and comments explaining the process of translating documents.

```
File Edit Search Source Run Debug Consoles Projects Tools View Help

temp.py × GettingStarted_Google_CloudAPI.py × Workflow_gcloudTranslate_v3_local_docs.py ×

172     }
173
174
175     # To output the translated document, uncomment the code below.
176     f = open('/home/bmarron/Desktop/gcTranslate_output_ja.pdf', 'wb')
177     f.write(response.document_translation.byte_stream_outputs[0])
178     f.close()
179
180     # If not provided in the TranslationRequest, the translated file will only be
181     # and its output mime type will be the same as the input file's mime type
182     print(
183         f"Response: Detected Language Code - {response.document_translation.detec
184     )
185
186     return response
187
188     # %%
189
190     # Do the translation
191     $ translate_document(project_id, file_path)
192
193     # Model used by Google to do the translation
194     # Neural Machine Translation (NMT)
195     model: "projects/735387290281/locations/us-central1/models/general/nmt"
196     model: "projects/735387290281/locations/us-central1/models/general/nmt"
197     # %%
```

My Adventures with Google Translate API: google-cloud-sdk and google-cloud-translate



LA UNIVERSIDAD DE / MVS

Marron
Spring 2025

Course Title: Taller de Traducción Ingeniería y Adelantos Tecnológicos
Program and Track: Interpretación y Traducción: 6º Cuatrimestre
Course ID: IT0629

Description

This course provides the modern foundations for linguistic translation in the engineering sciences and in the broader field of advanced technologies. The course will focus on translation in selected engineering disciplines as well as translation related to advanced and emerging technologies that come primarily from the engineering sciences. The professional translational mapping tools developed in this course will be specific to Spanish and English translations, although such tools and methodologies can readily be extended to the translation of other languages.

Major elements of the course will include: i) the conceptual framework for the science of engineering; ii) the structure, function, and dominant paradigm of selected engineering disciplines; iii) the state of advanced and emerging technologies in selected engineering disciplines; iv) the elements of style and the use of standard conventions in English; v) a review of essential English grammatical structures; vi) Version Control Systems (VCSs) and elements of quality assurance and quality control (QA/QC) applied to documents; vii) the professional use of Large Language Models (LLMs) in translation; viii) the direct translation of engineering documents; and ix) the production of client deliverables.

Scope

1. Conceptual Framework for the Science of Engineering

- 1.1 Historical Context
- 1.2 Science vs. Engineering
- 1.3 Major Engineering Disciplines

2. Structure, Function, and Dominant Paradigms

- 2.1 Thomas Kuhn's "The Structure of Scientific Revolutions"
- 2.2 Analysis of Selected Engineering Disciplines

3. The Elements of Style in Professional Writing

- 3.1 Strunk and White's, "Elements of Style"
- 3.2 Developing a Professional Voice

4. Review of Essential English Grammar

- 4.1 Murphy's, "English Grammar in Use"
- 4.2 The Yale Graduate Writing Center

5. Document QA/QC and Version Control Systems

- 5.1 Introduction to Document QAQC
 - 5.1.1 Fundamental Concepts of QAQC
 - 5.1.2 Frameworks for Document QAQC
- 5.2 Introduction to Version Control Systems (VCSs)
 - 5.2.1 Using Git and Github

Course Description in .pdf format
Original language: English

My Adventures with Google Translate API: google-cloud-sdk and google-cloud-translate

Machine Translated by Google



Marron
Printemps 2025

Titre du cours : Atelier de traduction Ingénierie et avancées technologiques

Programme et parcours : Interprétation et traduction : 6e semestre

ID du cours : IT0529

Description

Ce cours fournit les bases modernes de la traduction linguistique dans les sciences de l'ingénierie et dans le domaine plus large des technologies avancées. Le cours se concentrera sur la traduction dans certaines disciplines d'ingénierie ainsi que sur la traduction des technologies avancées et émergentes qui proviennent principalement des sciences de l'ingénierie. Les outils professionnels de catalogues terminologiques développés dans ce cours sont utilisés.

Le cours sera spécifique aux traductions en espagnol et en anglais, bien que ces outils et méthodologies puissent facilement être étendus à la traduction d'autres langues.

Les principaux éléments du cours comprennent : i) le cadre conceptuel de la science de l'ingénierie ; ii) la structure, la fonction et le paradigme dominant de certaines disciplines d'ingénierie ; iii) l'état des technologies avancées et émergentes dans certaines disciplines d'ingénierie ; iv) les éléments de style et l'utilisation des conventions standard en anglais ; v) un examen des structures grammaticales anglaises essentielles.

vi) les systèmes de contrôle de version (VCS) et les éléments d'assurance qualité et de contrôle qualité (QAQC) appliqués aux documents ; vii) l'utilisation professionnelle de grands modèles linguistiques (LLM) dans la traduction ; viii) la traduction directe de documents d'ingénierie ; et ix) la production de livrables clients.

Portée

1. Cadre conceptuel de la science de l'ingénierie

1.1 Contexte historique

1.2 Science et ingénierie

1.3 Principales disciplines d'ingénierie

2. Structure, fonction et paradigmes dominants

2.1 « La structure des révolutions scientifiques » de Thomas Kuhn

2.2 Analyse de certaines disciplines d'ingénierie

3. Les éléments de style dans la rédaction professionnelle

3.1 Strunk et White. « Éléments de style »

3.2 Développer une voix professionnelle

4. Révision de la grammaire anglaise essentielle

4.1 Murphy, « La grammaire anglaise en usage »

4.2 Le Centre d'écriture des diplômés de Yale

5. Document QAQC et systèmes de contrôle de version

5.1 Introduction au document QAQC

5.1.1 Concepts fondamentaux de l'QAQC

5.1.2 Cadres pour l'QAQC des documents

5.2 Introduction aux systèmes de contrôle de version (VCS)

5.2.1 Utilisation de Git et Github

Course Description in .pdf format
Translated language: French

My Adventures with Google Translate API: google-cloud-sdk and google-cloud-translate

Machine Translated by Google



Braun
Frühling 2025

Kursziel:
Übersetzungswerkstatt Technik und technologische Fortschritte
Programm und Track:
Dolmetschen und Übersetzen: 6. Semester
Kurs-ID:
IT0529

Beschreibung:
Dieser Kurs vermittelt die modernen Grundlagen für sprachliche Übersetzungen in den Ingenieurwissenschaften und im weiteren Bereich der fortgeschrittenen Technologien. Der Kurs konzentriert sich auf Übersetzungen in ausgewählten Ingenieurdisziplinen sowie auf Übersetzungen im Zusammenhang mit fortgeschrittenen und aufkommenden Technologien, die hauptsächlich aus den Ingenieurwissenschaften stammen. Da in diesem Kurs entwickelten professionellen Translationsmapping-Tools Der Kurs konzentriert sich speziell auf Übersetzungen ins Spanische und Englische, obwohl diese Werkzeuge und Methoden problemlos auf die Übersetzung anderer Sprachen ausgeweitet werden können.

Wichtige Elemente des Kurses sind: i) der konzeptionelle Rahmen der Ingenieurwissenschaften; ii) Struktur, Funktion und vornehmendes Paradigma ausgewählter Ingenieurdisziplinen; iii) der Stand fortgeschrittlicher und aufkommender Technologien in ausgewählten Ingenieurdisziplinen; iv) Stilelemente und Verwendung standardmäßiger Konventionen in der englischen Sprache; v) eine Wiederholung wesentlicher englischer Grammatikkategorien; vi) Dokumente angewandte Versionskontrollsysteme (VCSs) und Elemente der Qualitätssicherung und Qualitätskontrolle (QACQC); vii) die professionelle Verwendung von Large Language Models (LLMs) bei der Übersetzung; viii) die direkte Übersetzung von technischen Dokumenten; und ix) die Erstellung von Liefergegenständen für den Kunden.

Umfang

1. Konzeptioneller Rahmen für die Ingenieurwissenschaften

1.1 Historischer Kontext

1.2 Wissenschaft vs. Technik

1.3 Wichtige Ingenieurdisziplinen

2. Struktur, Funktion und dominante Paradigmen

2.1 Thomas Kuhns „Die Struktur wissenschaftlicher Revolutionen“

2.2 Analyse ausgewählter Ingenieurdisziplinen

3. Die Elemente des Stils beim professionellen Schreiben

3.1 Strunk und White, „Elements of Style“

3.2 Entwicklung einer professionellen Stimme

4. Wiederholung der grundlegenden englischen Grammatik

4.1 Murphy's, „Englische Grammatik im Einsatz“

4.2 Das Yale Graduate Writing Center

5. Dokumentieren Sie QACQC und Versionskontrollsysteme

5.1 Einführung zum Dokument QACQC

5.1.1 Grundlegende Konzepte der Qualitätssicherung und Qualitätskontrolle

5.1.2 Rahmenbedingungen für die Dokumenten-Qualitätssicherung/Qualitätskontrolle

5.2 Einführung in Versionskontrollsysteme (VCSs)

5.2.1 Verwendung von Git und GitHub

Course Description in .pdf format
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茶色
2025年春

コース名: 翻訳ワークショップ エンジニアリングと技術の進歩
プログラムとトラック: 翻訳・翻訳 5学期
コースID: IT0629

説明

このコースでは、工学科学とより広範な先端技術分野における言語翻訳の現代的な基礎を提供します。このコースでは、特定の工学分野の翻訳と、主に工学科学から生まれた先端技術や新興技術に関する翻訳に焦点を当てます。このコースで開発された専門的な翻訳マッピングツールは、

このコースはスペイン語と英語の翻訳に特化していますが、このようなツールと方法論は他の言語の翻訳にも容易に拡張できます。

コースの主な要素は、J) 工学の概念的枠組み J) 選択された工学分野の構造、機能、および支配的なパラダイム J) 選択された工学分野における先端技術と新興技術の状況 J) 英語のスタイル要素と標準規則の使用 J) 基本的な英語の文法構造のレビューが含まれます。

v) 文書に適用されるバージョン管理システム (VCS) と品質保証および品質管理 (QAQC) の要素 v) 翻訳における大規模言語モデル (LLM) の専門的な使用 v) エンジニアリング文書の直訳翻訳、および ix) クライアント提案物の作成。

範囲

1. 工学科学の概念的枠組み
 - 1.1 歴史的背景
 - 1.2 科学工学
 - 1.3 など工学分野
2. 構造、機能、そして支配的なパラダイム
 - 2.1 ドームスクーンの「科学革命の構造」
 - 2.2 選択された工学分野の分析
3. プロフェッショナルライティングにおけるスタイルの要素
 - 3.1 ストランクヒホワイトの「スタイルの要素」
 - 3.2 プロフェッショナルな声を育てる
4. 基本的な英語文法の復習
 - 4.1 マーフィーの「English Grammar in Use」
 - 4.2 イェール大学大学院ライティングセンター
5. ドキュメントQAQCとバージョン管理システム
 - 5.1 ドキュメントQAQCの概要
 - 5.1.1 QAQCの基本概念
 - 5.1.2 ドキュメントQAQCのフレームワーク
 - 5.2 バージョン管理システム (VCS) の概要
 - 5.2.1 GitとGithubの使用

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LA UNIVERSIDAD DE MVS

पुस्तक
नवंबर 2025

प्रिवेट:

प्राक्तन छात्रों की प्राप्ति पर जारीकरण
प्राक्तन छात्रों की प्राप्ति पर जारीकरण
प्राक्तन छात्रों की प्राप्ति

प्राक्तन छात्रों की प्राप्ति पर जारीकरण

प्राक्तन छात्रों की प्राप्ति
प्राक्तन छात्रों की प्राप्ति

प्रिवेट:

एक प्राक्तन छात्रों की प्राप्ति विषय और उनका गैरिमिलिनियन से आगले समय में प्राप्ति अनुदान के लिए आधिकारिक वाकात प्राप्त करता है। एक प्राक्तन छात्रों की प्राप्ति विषय विषयों में अनुदान के बाहर बहुत ज्ञानी और उनकी गैरिमिलिनियन से अनुदान अनुदान प्राप्त करने को मुख्य व्यवस्था है। इस प्राक्तन छात्रों के लिए अनुदान विषय के लिए अनुदान देता है।

प्राक्तन छात्रों की प्राप्ति विषय और उनका गैरिमिलिनियन से आगले समय में प्राप्ति अनुदान के लिए अनुदान देता है।

प्राक्तन छात्रों की प्राप्ति विषय के लिए विषयों: i) गैरिमिलिनियन विषय के लिए विषयों; ii) विषय विषयों की विषयों, वाकात और अनुदान प्राप्ति; iii) विषय विषयों की विषयों, वाकात और उनकी गैरिमिलिनियन की विषयों; iv) विषयों के लिए विषयों की विषयों, v) विषय विषयों की विषयों;

v) विषयों के लिए विषयों की विषयों, vi) विषय विषयों की विषयों, viii) विषय विषयों की विषयों, ix) विषय विषयों की विषयों;

1. इंटर्वियू विषय के लिए विषयों की विषयों
 - 1.1 विषयों की विषयों
 - 1.2 विषयों की विषयों
 - 1.3 विषयों की विषयों

2. वाकात, वाकात और अनुदान विषयों
 - 2.1 वाकात वाकात, "वाकात के लिए"
 - 2.2 वाकात विषयों की विषयों

3. वाकातवाली विषयों की विषयों
 - 3.1 वाकात वाकात, "वाकात के लिए"
 - 3.2 वाकातवाली विषयों की विषयों

4. वाकातवाली विषयों की विषयों
 - 4.1 वाकात, "वाकात वाकात के लिए"
 - 4.2 वाकात वाकात के लिए

5. QAQC और लोगोक विषयों प्राप्ति का वाकातवालीकरण करें

- 5.1 QAQC की विषयों की विषयों
 - 5.1.1 QAQC की विषयों की विषयों
 - 5.1.2 लोगोक QAQC के लिए विषयों
- 5.2 वाकातवाली विषयों (VCS) की विषयों
 - 5.2.1 Git और Github के वाकातवाली

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MIME type application/pdf

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Recommendations

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Learn Python The world's Python resources are huge!

Anaconda is an open ecosystem for sourcing, building, and deploying data science and AI initiatives. Spyder is a solid IDE.

Apply for a Google Cloud Account Trial account gives you 6000 MXN and 90 days

Learn Google Cloud Client Libraries google-cloud-sdk and google-cloud-translate to start

Begin translating with Google's API for Python!

The Future

The image shows the homepage of the Smartling website. At the top, there's a navigation bar with the Smartling logo, followed by "Software", "Services", and "Plans". The main headline reads "AI-powered translations with a human touch". Below it, a subtext states: "Smartling's LanguageAI™ platform provides the highest quality translations, faster, and at 70% lower cost". Four user stories are displayed in separate boxes:

- Nao | Mie-gun, Japan**: A woman smiling on a train.
- Silvan | Clermont-l'Hérault, France**: A man in a puffy jacket in a supermarket aisle.
- Taner | Istanbul, Turkey**: A man walking past a fruit stand.
- Maria | Bari, Italy**: A woman working at a computer.

Thank you!
