

# The Evaluation of the Google Translation Service

## Abstract

Hong Kong is a metropolitan area in the world. English and Traditional Chinese are the official languages of Hong Kong. In this article, we use an official announcement from Hong Kong Government (HKGOV) to be the evaluation sample because HKGOV provides both two languages scripts for all announcements. Consequently, we compare the difference between the result conducted by the Google translation tool and the official script provided by HKGOV. In the first section, we introduce sentences where we captured from and the languages we are going to examine. In the second section, we examine the quality of the Google translation result. In the final section, we analyse the translation quality as a computer science perspective.

## Methodology

English and Traditional Chinese languages will be used to conduct the evaluation of the Google translation service. The sample article can be found from this link (<https://www.lcsd.gov.hk/en/facilities/otherinfo/petpark.html>), which is an official announcement published by HKGOV, provides both English and Tradition Chinese versions. During the evaluation, we are going to translate from English to Traditional Chinese and translate it from Traditional Chinese to English as well. The evaluation will be split into two parts, the first one is calculating the difference of words with the official script, and another one is comparing the information difference of paragraphs with the official script.

## Translation Results

The results can be found in appendix 1 and 2. The appendix 1 is the article which translated from English to Traditional Chinese. The appendix 2 is the article which translated from Traditional Chinese to English.

## Observation

We try to find the difference of wordings from the original script and the translation result. We can observe from the Figure 1-1 and Figure 1-2 that over three hundred words were highlighted in the original paragraph. It is over 75% differences have been found by comparing with the translation result.

<p>1 #Inclusive Park for Pets</p> <p>2 Background</p> <p>3 To enable park users and members of the public who bring their pets into parks to use park facilities together in an inclusive environment, the Leisure and Cultural Services Department (LCSD) launched the trial scheme of "Inclusive Parks for Pets" by opening up 6 LCSD parks for use by pets in 2019. As the trial scheme was well-received, LCSD has regularised the arrangement by providing more "Inclusive Parks for Pets" in various districts starting from 6 February 2021 so as to meet public demand for opening up more existing parks for shared-use of park facilities among pet owners and their pets.</p> <p>4 What is the difference between "Inclusive Park for Pets" and pet garden?</p> <p>5 Pet gardens are specifically designed for use by pets and are normally provided with fences and double pet gates to prevent pets from running away. Ancillary facilities normally include dog excreta collection bins/dog latrines, hand-washing facilities. Some venue are even provided with play equipment and drinking fountains for exclusive use by pets as well as amenity lawns, etc.</p> <p>6 The "Inclusive Parks for Pets" are not specifically designed for use by pets. The design concept is to open up the existing parks for members of the public to visit with their pets. LCSD will provide additional basic ancillary facilities, such as dog excreta collection bin and hand-washing facilities, etc., at the venues for use by members of the public and their pets in light of the actual circumstances and needs. The "Inclusive Parks for Pets" are not specifically designed for use by pets. To keep in line with the concept of enabling the shared use of park facilities among different users, members of the public are required to keep their pets on a leash and under proper control in the venues so as to avoid causing nuisance to other users.</p> <p>7 Users' Code for "Inclusive Park for Pets"</p> <p>8 (I) Keep your dog on a leash.</p> <p>9 (II) Make sure your pet is kept under proper control and effectively restrained from causing nuisance or danger to other people or pets.</p> <p>10 (III) Clean up the faeces of pets.</p> <p>11 (IV) Keep the environment clean and hygienic.</p> <p>12 Locations of "Inclusive Parks for Pets"</p> <p>13 Virtual Guided Tour of "Inclusive Park for Pets"</p>	<p>1 "Pet Sharing Park"</p> <p>2 Background</p> <p>3 In order to allow park users and citizens who bring pets to the park to utilize park facilities in an inclusive environment, the Leisure and Cultural Services Department (LCSD) launched the "Pet Sharing Park" pilot program in 2019, opening up 6 response pilot programs under its jurisdiction. The response is satisfactory. The Leisure and Cultural Services Department is now arranging for regularization, and starting from February 6, 2021, more "pet sharing parks" will be added in various districts to respond to the public's demand for opening up more parks so that they can have many park facilities.</p> <p>4 What is the difference between a "pet sharing park" and a pet park?</p> <p>5 A pet park is a venue specially designed for pets. Generally, venues and double gates are arranged to prevent loss. Facilities in the venue generally include dog dung collection boxes/dog walking, hand-washing equipment, and the venue also provides special amusement facilities and drinking fountains for pets, as well as pet signs and so on.</p> <p>6 "Pet Sharing Park" is not a venue specifically designed for pets. The concept is to open some parks to the public to share with their pets. The Leisure and Cultural Services Department will provide basic supporting facilities, such as dog kennels, on site based on actual conditions and needs. "Pet Sharing Park" is not a place specially designed for pets. It is in line with the concept of sharing park facilities for different users, or the citizens in the park need to use their own items with ropes. Pets, and play with restraints, happily nuisance other people.</p> <p>7 User Rules for "Pet Sharing Park"</p> <p>8 (1) Please chase your dog with a belt or rope.</p> <p>9 (2) Please come to restrain your pets and control their behaviors, causing nuisance or harm to people or pets around them.</p> <p>10 (3) Please clean up pet cultures.</p> <p>11 (4) Please keep the environment clean and sanitary.</p> <p>12 Location of "Pet Sharing Park"</p> <p>13 Virtual Guided Tour of "Pet Sharing Park"</p>
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Figure 1-1 The differences of the English version of the official script and the translation result.

<p>1 寵物共享公園</p> <p>2 背景</p> <p>3 為讓公園使用者與帶同寵物到公園的市民在共融環境下一同使用公園設施，康樂及文化事務署康文署於2019年推出寵物共享公園試驗計劃，開放轄下6個公園讓寵物共享。因應試驗計劃反應理想，康文署目前已有關安排恆常化，並由2021年2月6日起，於各區陸續增設更多寵物共享公園，以回應市民對開放更多現有公園讓他們與其寵物共享公園設施的需求。</p> <p>4 寵物共享公園與寵物公園有什麼分別</p> <p>5 寵物公園是專門設計予寵物使用的場地，一般會設有圍欄及雙重門門以防止寵物走失。場地配置設施一般包括有狗糞收集箱、狗廁所、洗手設備。部份場地更設有供寵物專用的遊樂設施及飲水機，以及休憩草坪等。</p> <p>6 寵物共享公園並非專門設計給寵物使用的場地，其概念是將現有的公園開放予市民讓其寵物共享。康文署會按實際情況及需要於場地額外提供基本配置設施，例如狗糞收集箱和洗手設施等，方便市民及其寵物使用。寵物共享公園並非專門設計給寵物使用的場地，為配合不同使用者共用公園設施的概念，市民在場內應以帶或繩子牽引其寵物，並加以妥善管理，以免滋擾其他場地使用者。</p> <p>7 寵物共享公園使用者守則</p> <p>8 請以帶或繩子牽引你的狗隻。</p> <p>9 請妥善管理你的寵物並恰當地控制其行為，以免對其他人或寵物造成滋擾或傷害。</p> <p>10 請清理寵物的排泄物。</p> <p>11 請保持環境清潔衛生。</p> <p>12 寵物共享公園地點</p> <p>13 寵物共享公園虛擬導覽</p>	<p>1 包容性寵物公園</p> <p>2 背景</p> <p>3 康樂及文化事務署康文署為讓公園使用者和攜帶寵物入園的市民在共融的環境中共同使用公園設施，推出共融寵物公園試驗計劃，開設了6個康文署2019年寵物使用公園。由於試驗計劃廣受歡迎，康文署已將安排規範化，由2021年2月6日起在各區增設共融寵物公園，以滿足市民開放更多現有寵物的需求。寵物主人和他們的寵物共享公園設施的公園。</p> <p>4 寵物包容公園和寵物園有什麼區別</p> <p>5 寵物園是專供寵物使用的，通常設有圍欄和雙重門門以防止寵物逃脫。附屬設施通常包括狗糞收集箱/狗廁所、洗手設施。有的增設設有寵物專用遊樂設施、飲水機、休憩草坪等。</p> <p>6 包容性寵物公園並非專為寵物設計，設計理念是開放現有的公園供市民攜帶寵物參觀。康文署會因應實際情況和需要，在場地提供額外的基本配置設施，例如狗糞收集箱和洗手設施等，供市民及其寵物使用。包容性寵物公園並非專為寵物設計，為配合不同使用者共用公園設施的理念，市民在場內應拉好寵物並妥善管理，以免對其他使用者造成滋擾。</p> <p>7 包容性寵物公園用戶代碼</p> <p>8 把你的狗拴在皮帶上。</p> <p>9 確保您的寵物得到妥善控制，並有效避免對其他人或寵物造成滋擾或危險。</p> <p>10 清理寵物糞便。</p> <p>11 保持環境清潔衛生。</p> <p>12 包容性寵物公園的位置</p> <p>13 共融寵物園虛擬導覽</p>
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Figure 1-2 The differences of the Traditional Chinese version of the official script and the translation result.

## The quality of the translation result

The information carried out is quite accurate by observing the original script and the translation result. The quality of translation result is quite impressive. Even though most of words were highlighted to be identified as a difference, they are synonym words (See table 1-3). But some of them are not incorrect, the information beyond sentences is totally different (See table 1-4).

Table 1-3 The example of synonym word

Original Word	Translated Word	Remarks
分別	區別	The translated word is a synonym word of the original word. It means "difference" in English.
概念	理念	The translated word is a synonym word of the original word. It means "idea" in English.

恰當	有效	The translated word is a synonym word of the original word. It means “effective” in English.
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*Table 1-4 The example of different information carried out*

Original Sentence	Translated Sentence	Remarks
以防止寵物走失	以防止寵物逃跑	The translated sentence is totally different with the original sentence. It sounds like pets are escaping from their masters.

According to the introduction of the Google translate, Google (2010) introduces that the translation service was developed by the Machine Learning technology. It analyzed materials from different in order to learn the pattern from the material and categorize the material into a language category. The machine learning technology is not a model designed for perfection. It is designed to be able to learn from rectification to turn the model. After refining the model, it can translate the sentences more precisely. As a result, we can provide recommendations on the translation result to Google to help them improve the machine learning model of the translation service.

#### References

- [1] Leisure and Cultural Services Department of The Government of the Hong Kong Special Administrative Region, “Inclusive Park for Pets” [Online]. Available at: <https://www.lcsd.gov.hk/tc/facilities/otherinfo/petpark.html>. (Accessed: 19 Sep 2021)
- [2] Google (2010), Inside Google Translate [Online]. <https://www.youtube.com/watch?v=GdSC1Z1Kzs>. (Accessed: 19 Sep 2021)

## Appendix 1

The Google Translation Result: English → Traditional Chinese

### “包容性寵物公園”

#### 背景

康樂及文化事務署（康文署）為讓公園使用者和攜帶寵物入園的市民在共融的環境中共同使用公園設施，推出“共融寵物公園”試驗計劃，開設了 6 個康文署 2019 年寵物使用公園。由於試驗計劃廣受歡迎，康文署已將安排規範化，由 2021 年 2 月 6 日起在各區增設「共融寵物公園」，以滿足市民開放更多現有寵物的需求。寵物主人和他們的寵物共享公園設施的公園。

#### “寵物包容公園”和寵物園有什麼區別？

寵物園是專供寵物使用的，通常設有圍欄和雙寵物門，以防止寵物逃跑。附屬設施通常包括狗糞收集箱/狗廁所、洗手設施。有的場館還設有寵物專用遊樂設備、飲水機、休閒草坪等。

“包容性寵物公園”並非專為寵物設計。設計理念是開放現有的公園，供市民攜帶寵物參觀。康文署會因應實際情況和需要，在場地提供額外的基本配套設施，例如狗糞收集箱和洗手設施等，供市民及其寵物使用。“包容性寵物公園”並非專為寵物設計。為配合不同使用者共用公園設施的理念，市民須在場館內拴好寵物並妥善管控，以免對其他使用者造成滋擾。

#### “包容性寵物公園”用戶代碼

- (I) 把你的狗拴在皮帶上。
- (二) 確保您的寵物得到妥善控制，並有效避免對其他人或寵物造成滋擾或危險。
- （三）清理寵物糞便。
- （四）保持環境清潔衛生。

#### “包容性寵物公園”的位置

#### 「共融寵物樂園」虛擬導賞團

## Appendix 2

The Google Translation Result: Traditional Chinese → English

### "Pet Sharing Park"

#### background

In order to allow park users and citizens who bring pets to the park to unite park facilities in an inclusive environment, the Leisure and Cultural Services Department (LCSD) launched the "Pet Sharing Park" pilot program in 2019, opening up 6 response pilot programs under its jurisdiction. The response is satisfactory. The Leisure and Cultural Services Department is now arranging for regularization, and starting from February 6, 2021, more "pet sharing parks" will be added in various districts to respond to the public's demand for opening up more parks so that they can have many park facilities.

What is the difference between a "pet sharing park" and a pet park?

A pet park is a venue specially designed for pets. Generally, venues and double gates are arranged to prevent loss. Facilities in the venue generally include dog dung collection boxes/dog walking, hand-washing equipment, and the venue also provides special amusement facilities and drinking fountains for pets, as well as rest signs and so on.

"Pet Sharing Park" is not a venue specifically designed for pets. The concept is to open some parks to the public to share with their pets. The Leisure and Cultural Services Department will provide basic supporting facilities, such as dog kennels, on site based on actual conditions and needs. "Pet Sharing Park" is not a place specially designed for pets. It is in line with the concept of sharing park facilities for different users, or the citizens in the park need to use their own items with ropes. Pets, and play with restraints, happily nuisance other people.

#### User Rules for "Pet Sharing Park"

- (1) Please chase your dog with a belt or rope.
- (2) Please come to restrain your pets and control their behaviors, causing nuisance or harm to people or pets around them.
- (3) Please clean up pet cultures.
- (4) Please keep the environment clean and sanitary.

#### Location of "Pet Sharing Park"

#### Virtual Guided Tour of "Pet Sharing Park"