

# Technical Disclosure Commons

---

Defensive Publications Series

---

October 02, 2017

## ASSISTANT WORD CHOICE TRAINING

Google Inc.

Follow this and additional works at: [http://www.tdcommons.org/dpubs\\_series](http://www.tdcommons.org/dpubs_series)

---

### Recommended Citation

Inc., Google, "ASSISTANT WORD CHOICE TRAINING", Technical Disclosure Commons, (October 02, 2017)  
[http://www.tdcommons.org/dpubs\\_series/736](http://www.tdcommons.org/dpubs_series/736)



This work is licensed under a [Creative Commons Attribution 4.0 License](https://creativecommons.org/licenses/by/4.0/).

This Article is brought to you for free and open access by Technical Disclosure Commons. It has been accepted for inclusion in Defensive Publications Series by an authorized administrator of Technical Disclosure Commons.

## **ASSISTANT WORD CHOICE TRAINING**

### **ABSTRACT**

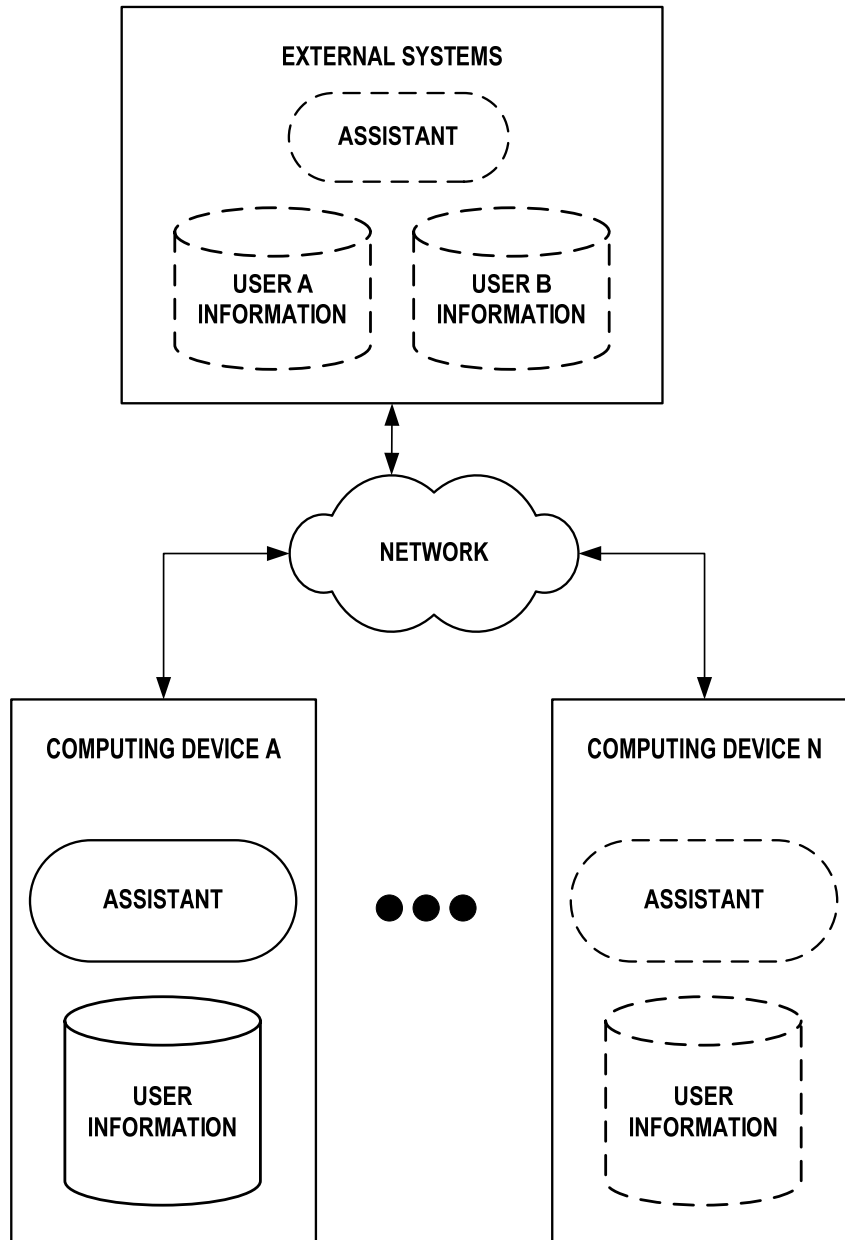
A virtual, intelligent, or computational assistant (e.g., also referred to simply as an “assistant”) is described that is configured to adapt to a user’s word choices when providing output to the user. For a variety of reasons (e.g., regional differences, time progression, cultural differences, etc.) users may select different words and phrases for similar meanings. For instance, some users may say water fountain while other users may say bubbler. While users may understand that multiple terms refer to the same object (e.g., have the same or similar meaning), the use of a different term may feel unnatural and awkward to users. The assistant may parse a user’s inputs (e.g., text inputs, spoken language, etc.) and formulates outputs (e.g., text outputs, verbal outputs, etc.) to preferentially use terms used by the user. This may be referred to as response entrainment.

### **DESCRIPTION**

Assistants execute on counter-top devices, mobile phones, automobiles, and many other type of computing devices. Assistants output useful information, responds to users’ needs, or otherwise performs certain operations to help users complete real-world and/or virtual tasks. Some assistants may provide output, such as text or speech, to users. In some cases, assistants for different users may always use common terms to refer to the same objects. For instance, even though the terms “sneakers,” “tennis shoes,” and “trainers” can be used to refer to athletic shoes, assistants may always use the term “sneakers” to refer to athletic shoes. However, while a

user may understand that multiple terms refer to the same object, the use of a term other than what the user would select may feel unnatural and awkward to the user.

The example system shown in FIG. 1 provides an assistant that adapts to a user's word (or phrase) choices. For example, when an assistant is providing output that references an object that a user has referred to using a particular phrase, the assistant may use the particular phrase used by the user when referring to the object.

**FIG. 1**

The system of FIG. 1 includes one or more external systems and computing devices A–N communicating across a network with each of computing devices A–N executing an assistant that performs operations involving groups of people. The network of FIG. 1 represents a combination of any one or more public or private communication networks, for instance, television broadcast networks, cable or satellite networks, cellular networks, Wi-Fi networks,

broadband networks, and/or other type of network for transmitting data (e.g., telecommunications and/or media data) between various computing devices, systems, and other communications and media equipment. Computing devices A–N represent any type of computing device, server, mainframe, cloud computing environment, or other system that is configured to execute an assistant and communicate on a network. The external systems represent any type of server or other computing system that is configured to support the assistants executing at computing devices A–N.

The external systems and computing devices A–N can be personal computing devices. In some examples, the external systems and/or computing devices A–N may be shared assets of multiple users. Examples of computing devices A–N include mobile phones, tablet computers, wearable computing devices, countertop computing devices, home automation computing devices, laptop computers, desktop computers, televisions, stereos, automobiles, and any and all other type of mobile and non-mobile computing device that is configured to execute an assistant. For example, computing device A may be a countertop assistant device and computing device N may be a mobile phone or automobile infotainment system.

An assistant executes across any combination of external systems one or more of computing devices A–N to provide assistant services to users of computing devices A–N. Examples of assistant services include: setting up reminders, creating calendar entries, booking travel, online ordering, sending messages or other communications, reading text aloud, controlling televisions, lights, thermostats, appliances, or other computing devices, providing navigational instructions, or any other conceivable task or operation that may be performed by an assistant.

As a user interacts with the assistant, the assistant may obtain personal information about the user. Examples of personal information include: habits, word or phrase selections, voice samples, routines, preferences, notes, lists, contacts, communications, interests, location histories, and other types of user information. After receiving explicit permission from the user, the assistant may store the personal information at user information data stores and in the course of providing assistant services, make use of the personal information stored at the user information data stores.

The external systems and computing devices A–N and the assistant treat the information stored at the information stores so that the information is protected, encrypted, or otherwise not susceptible to hacking or unauthorized use. The information stored at the information data stores may be stored locally at each of computing devices A–N and/or remotely (e.g., in a cloud computing environment provided by the external systems and which is accessible via the network of FIG. 1).

Several situations may arise where the assistant provides linguistic output to a user. As one example, the assistant can output text or synthesized speech as part of a conversation with a user. As another example, the assistant can output text or synthesized speech to respond to a user's query or search. As another example, the assistant can output text or synthesized speech to inform a user that a task is complete.

In any situation where the assistant is providing linguistic output to the user, the assistant may use terms (e.g., words and phrases) that are more natural for the user. The assistant may determine which terms are more natural for the user based on linguistic input provided to the user. The linguistic input may be implicit or explicit.

Explicit input may be where the user specifically requests that the assistant refer to an object with a certain term. For example, the user may specifically request that the assistant refer to water fountains as bubblers.

Implicit input may be where the user refers to an object by a certain term in writings or speech provided for a purpose other than training the assistant. For instance, the assistant may parse writings or speech provided by the user to match terms and objects. As one example, the assistant may parse speech provided by the user to determine that the user pronounces pecan nuts “pee-KAHN” as opposed to “pee-CAN.” As another example, the assistant may parse e-mails sent by the user to determine that the user refers to parking structures as parking ramps.

The assistant may provide linguistic output to the user using the determined terms. As one example, when providing linguistic output referring to parking structures (e.g., navigation directions), the assistant may use the term parking ramp. As another example, when providing linguistic output referring to water fountains, the assistant may use the term bubbler. As another example, when providing verbal linguistic output referring to pecan nuts, the assistant may use the “pee-KAHN” pronunciation.

By performing providing linguistic output using terms that are more natural for a user, the assistant may allow for less awkward interactions with the user. The above examples are just some use cases for the assistant architecture shown in FIG. 1, the assistant architecture has many other applications and use cases.