Technical Disclosure Commons

November 2019

Interactive learning mode for delivery of user interface multimedia guidance

Alena Fong

Nik Hanselmann

Follow this and additional works at: https://www.tdcommons.org/dpubs_series

Recommended Citation

Interactive learning mode for delivery of user interface multimedia guidance

<u>ABSTRACT</u>

Many users do not fully understand the functions of various user interface (UI) elements they see on their device screens. Traditional computers provide contextual information about UI elements in the form of a tooltip, e.g., that appears upon the user hovering the mouse pointer over a specific UI element. However, such a mechanism is absent in devices such as smartphones, tablets, etc. that rely on touch input screens without the use of a traditional mouse or other input mechanisms. This disclosure describes mechanisms that enable a user to seek and obtain interactive multimedia guidance about any user interface presented on the screen of such devices.

<u>KEYWORDS</u>

- Learning mode
- Mobile user interface
- Voice assistance
- Voice hover
- Mouse hover
- Tooltips
- Video tutorial
- Recorded lesson

<u>BACKGROUND</u>

Many users do not fully understand the functions of the various user interface (UI) elements they see on their device screens. As a result, they often lack knowledge of the consequences of clicking or tapping on a particular UI element. Owing to a general lack of

familiarity with technical concepts, novice users find it difficult to use unfamiliar UIs to a greater extent than users that have experience using computing devices. Further, many users find it difficult to acquire needed information about the UI from online sources because of a variety of factors such as limited knowledge of English that hampers the ability to form effective queries and process instructional materials that are typically in English, lower literacy leading to limited familiarity with keyboard based input, etc.

Traditional computers provide contextual information about UI elements in the form of a tooltip that appears upon hovering the mouse pointer over a specific UI element. However, such a mechanism is absent in devices, such as smartphones, tablets, etc. that rely on touch input screens without the use of a traditional mouse or other input mechanisms.

DESCRIPTION

This disclosure describes mechanisms that enable a user to obtain more information about UI elements presented on a user interface that the user views on a device, such as a smartphone, tablet, etc. Per the described techniques, the users are provided with the option to issue a voice command that is used to trigger a learning mode for the currently displayed screen content. The learning mode permits the user to tap on (or otherwise select) any displayed UI component, resulting in information about the component being presented to them via audio. Such information can include one or more of various aspects pertaining to the UI component functionality such as function, expected input values, typical output, triggered sequence(s) of actions, rationale for implementation within the UI, necessary interactive steps, etc.

The information can also be provided in formats other than audio. For example, the information can be an online help article, a video tutorial, etc. Further, multiple information delivery mechanisms can be combined to deliver multimodal information. Moreover, the

delivered information can be interactive such that users can interact with the presented content via voice commands, touch input, etc. For instance, a user can interact with initially provided information and ask for more details on specific aspects within the help information, invoke a tutorial for step-by-step guidance in using the component, etc.
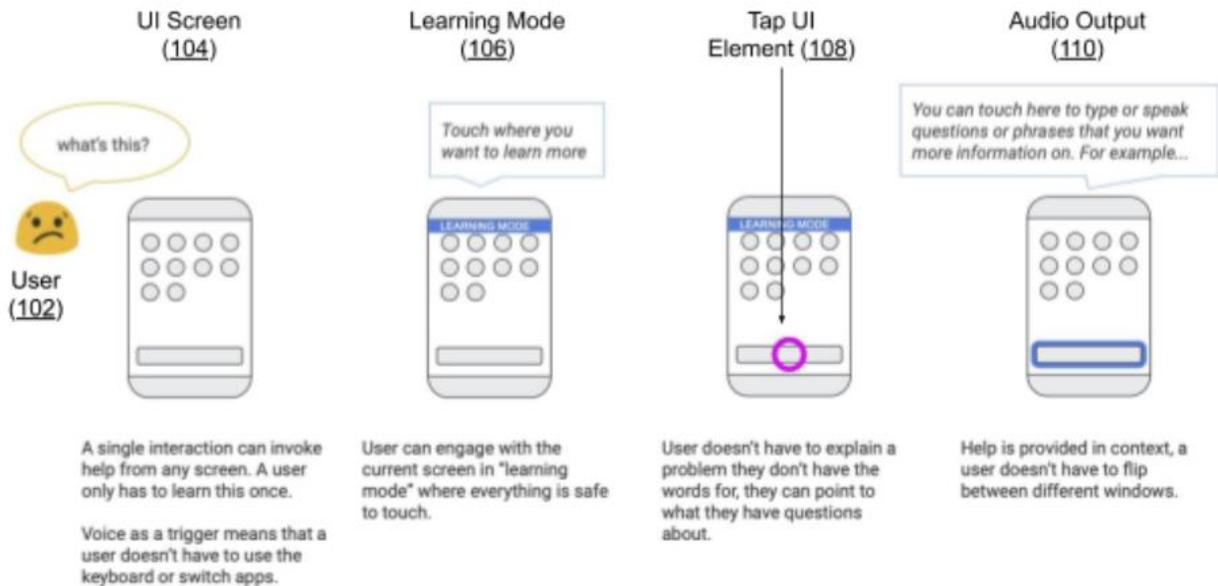
Fig. 1: Operational implementation of learning mode to seek and obtain UI information

Fig. 1 shows an operational implementation of invoking the described learning mode. A user (102) uses a voice command to seek help about the UI displayed on the screen (104) of their device. The command results in the device entering learning mode (106). The user can then tap on any UI element (108) to receive audio information (110) about the functionality of that element. The user can also select the UI element by voice input, e.g., "what does the big bar at the bottom do?" or other input mechanisms such as gestures.
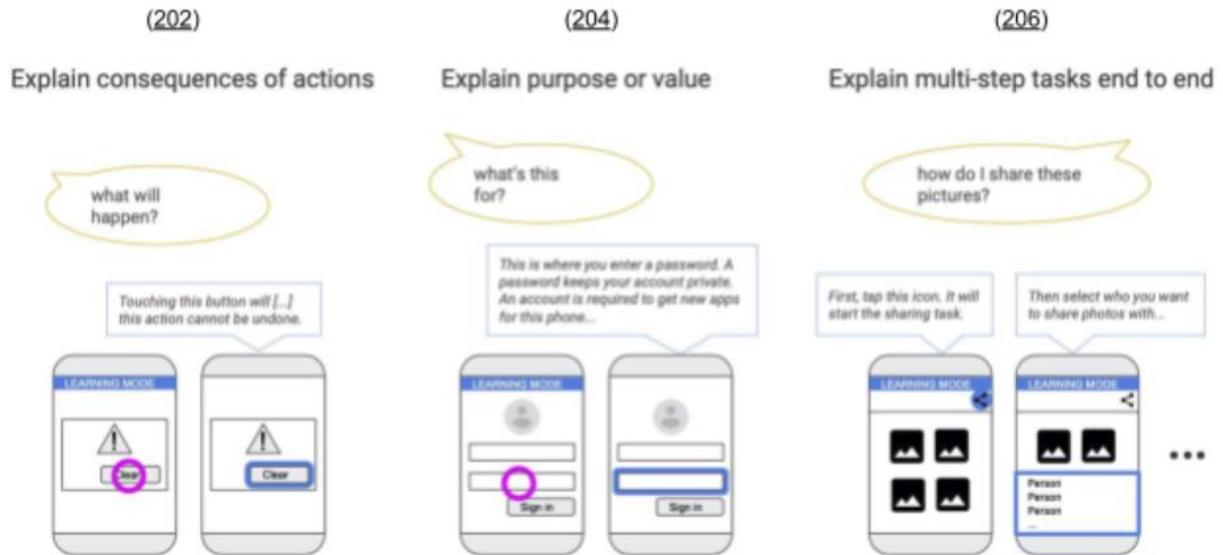
Fig. 2: Various aspects of UI components described in the UI learning mode

Fig. 2 depicts examples of the various aspects of UI components that can be described when in learning mode. As shown in Fig. 2, a user can ask about consequences of tapping a button (202), the purpose of a text field (204), and sequence of UI steps for a specific task (206).

Voice input is often preferred over keyboard input by novice users, who are more likely to require the assistance provided by the UI learning mode described in this disclosure. Further, the learning mode obviates the need to seek UI-related help by formulating specific queries and/or providing detailed descriptions of UI components on the screen, neither of which is easy for novice users. The inclusion of information of various types, such as audio, video, text, etc. can support different types of learning styles and preferences. For instance, novice users typically find text information difficult to follow and may prefer visual depictions or step-by-step tutorial guidance.

If the user permits, the tutorials or guidance that is provided can be customized to provide the desired information in a language preferred by the user, thus supporting users whose native

language is not English. Moreover, with user permission, the information content can be tailored such that it can be easily understood by those without technical knowledge and skills. As such, the learning mode described in this disclosure can serve as a replacement for a physically present teacher who is not always available when needed. In fact, the described techniques can be extended by incorporating recorded lessons from teachers and other helpers as another form of information presented within the learning mode.
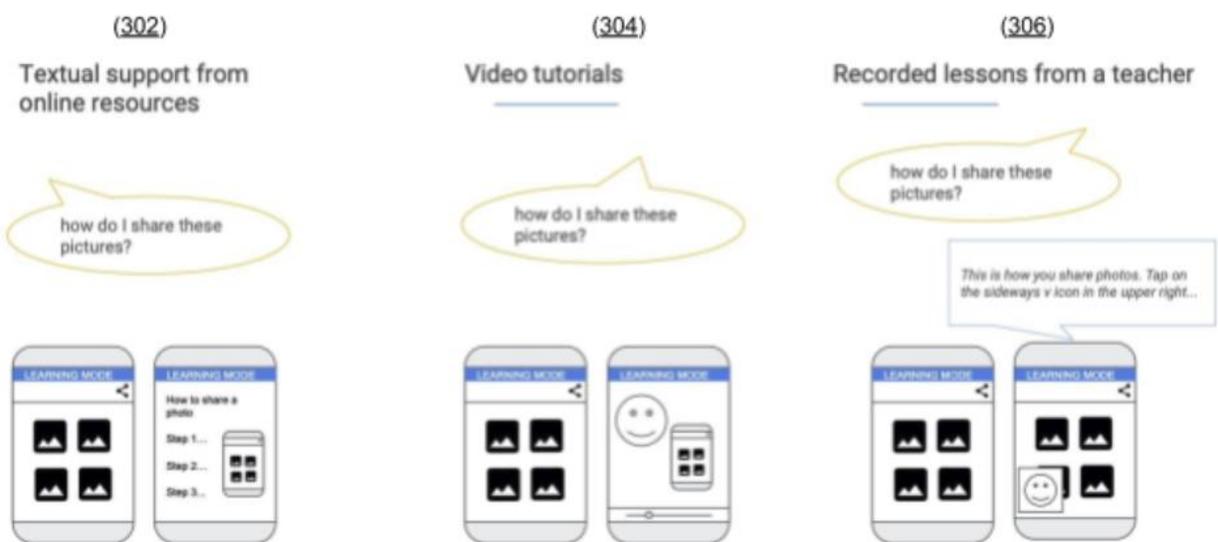
Fig. 3: Various types of information available in the learning mode

Fig. 3 illustrates that the same user query can be answered by providing different types of information such as text articles from online sources (302), video tutorial (304), and recorded lessons from a teacher (306).

Although the described mechanisms to provide user interface guidance is likely most useful on devices that lack traditional mouse input, the techniques described in this disclosure can also be implemented on traditional desktop and laptop computers. In such cases, the

information in the learning mode can be invoked by clicking the mouse on a UI element instead of, or in addition to, tapping on the screen.

Further to the descriptions above, a user may be provided with controls allowing the user to make an election as to both if and when systems, programs or features described herein may enable collection of user information (e.g., information about a user's social network, social actions or activities, profession, a user's preferences, or a user's current location), and if the user is sent content or communications from a server. In addition, certain data may be treated in one or more ways before it is stored or used, so that personally identifiable information is removed. For example, a user's identity may be treated so that no personally identifiable information can be determined for the user, or a user's geographic location may be generalized where location information is obtained (such as to a city, ZIP code, or state level), so that a particular location of a user cannot be determined. Thus, the user may have control over what information is collected about the user, how that information is used, and what information is provided to the user.

CONCLUSION

This disclosure describes mechanisms that enable a user to seek and obtain interactive multimedia guidance about any user interface presented on the display screen of a computing device such as a smartphone, tablet, or other device. Users are provided with options to invoke guidance via a voice command. Upon receipt of the voice command, a learning mode is triggered for the currently displayed screen content. The presented interactive multimedia information can include guidance pertaining to the UI component functionality such as function, expected input values, typical output, triggered sequence(s) of actions, rationale for implementation within the UI, necessary interactive steps, etc.