

Technical Disclosure Commons

Defensive Publications Series

July 2020

EYE GAZE ACTIVE TOUCHPAD MODE IN MIXED-FUNCTION TOUCHPAD

HP INC

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

Recommended Citation

INC, HP, "EYE GAZE ACTIVE TOUCHPAD MODE IN MIXED-FUNCTION TOUCHPAD", Technical Disclosure Commons, (July 14, 2020)

https://www.tdcommons.org/dpubs_series/3426



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.

Eye Gaze Active Touchpad Mode in Mixed-Function Touchpad

Abstract: The eye gaze of the user relative to the main display screen of a portable computer is used to automatically switch the operating mode of a mixed-function touchpad that combines a touchpad and a touchscreen between touchpad mode and touchscreen mode.

This disclosure relates to the field of user interfaces.

A technique is disclosed that uses the eye gaze of a computer user to switch the operating mode of a combined touchpad and touchscreen between touchpad mode and touchscreen mode.

Some portable (e.g. laptop and notebook) computers have, in addition to the main display a touchpad that has incorporated an auxiliary display screen. Such a "mixed function" touchpad can operate in a conventional touchpad mode, where the user can apply his or her fingers to the touchpad to move a pointer around the main display and select an item displayed on the main display at the position of the pointer. However, icons or controls that can be selected by the user can alternatively or additionally be displayed on the auxiliary display built into the touchscreen, and the user can select these by touching the touchpad at the corresponding location. Thus, at any point in time the touchpad can be operated in either of two modes: as a conventional touchpad in "touchpad mode", or as a touchscreen in "touchscreen mode".

Up to now, the user has manually instructed the computer when it should switch between these two modes by operating a control, such as a button or icon, to effect the desired mode. However, this manual intervention of the user to press the button each time to switch between modes can be problematic in use cases where the user frequently wishes to switch between these modes during operation.

According to the present disclosure, and as understood with reference to the Figure, the eye gaze of a user of a portable computer having a built-in camera is detected and used to determine whether the mixed function touchpad is to be operated in touchpad mode or touchscreen mode.

In operation, the built-in camera captures an image of the user's face at 10. Typically, the camera is disposed in the upper frame of the computer's display panel. At 20, the image is processed by an eye-gaze algorithm that determines the angle of the user's eye gaze relative to the display. At 30, it is determined whether the user is gazing at the display. If the user is gazing at the display, the computer automatically switches the mixed-function touchpad to touchpad mode at 40, without the user pressing a button on the computer or taking any other action. If it is determined at 30 that the user is not gazing at the display, then at 50 the computer remains in its present operating mode (touchscreen or touchpad). This process may be continually repeated.

In an alternate embodiment, if it is determined at 30 that the user is not gazing at the display, then at 50 the computer automatically switches the mixed-mode touchpad to touchscreen mode, without the user pressing a button on the computer or taking any other action.

The disclosed technique advantageously sets the operating mode of a mixed-function touchpad automatically based on the user's eye gaze, without any further user interaction with the computer.

Disclosed by JH Wang, Louis Lee, Stanley Lai, and Berney Chen, HP Inc.

