

Grouping Algorithm For Touchscreen Finger Position Detection

Tech ID: 27231 / UC Case 2016-520-0

SUMMARY

UCLA researchers in the Department of Electrical Engineering developed a new grouping algorithm for touchscreen finger position detection.

BACKGROUND

Touchscreen technology plays an important role in the booming mobile devices market. Conventional touchscreens are designed with both horizontal and vertical electrodes. When these sensors are activated by touch a specific channel is activated yielding the desired functionality. However, there can be unexpected responses due to channel coupling effects and body-induced background capacitance causing an unexpected channel response and false detection and diminished finger position accuracy. This can lead to a diminished or frustrating user experience and the development of a new technology to overcome these issues would greatly improve touchscreen technology.

INNOVATION

UCLA Prof. Mau-Chung Frank Chang and colleagues have developed a novel grouping algorithm for touchscreen finger position detection. This algorithm eliminates erroneous sensor channel response and false sensor-channel response from body-induced capacitance. While conventional technology may tolerate this input, the market trend towards higher resolution touch sensing and remote three-dimensional sensing require higher-quality sensory data with this erroneous data removed.

APPLICATIONS

Can be applied to existing and future touchscreen technologies

ADVANTAGES

- ▶ Algorithm yields higher quality sensor data
- ▶ Removes erroneous channel activation, improving sensitivity and accuracy.
- ▶ Can be implemented in existing or new touchscreen technology
- ▶ E.g. three-dimensional remote sensing, multi-touch

STATE OF DEVELOPMENT

Researchers have implemented the algorithm successfully in current touchscreen and in remote three-dimensional finger sensing technologies.

PATENT STATUS

Country	Type	Number	Dated	Case
United States Of America	Issued Patent	11,175,822	11/16/2021	2016-520

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INVENTORS

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OTHER INFORMATION

KEYWORDS

touchscreen, grouping algorithm, touchscreen sensitivity, touchscreen accuracy, three-dimensional touchscreen, remote three-dimensional sensing, finger sensing, finger detection, touchscreen finger detection, body induced background capacitance, background

CATEGORIZED AS

- ▶ Computer
- ▶ Other
- ▶ Software

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