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Revolutionizing Input: Exploring SUN-KEY and the Future of Keyboard-Free Interfaces

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Abstract: *Input is a important part for any input taking device. There are many ways to make input by the user for the ever-more powerful embedded market. Speech input is also other way to get a input to tiny keypads, yet its limited trustworthiness strength, and elasticity it also unsuitable for certain tasks and/or environments. Many attempts have been made to provide the common keyboard without the physical keyboard, to build "virtual keyboards". This promise to control our skill with the device without incurs the constraints of the massive physics. This paper gives technologies for alphanumeric input devices and methods with a focus on touch-typing. We analyse the type of the keyboard modality and show how they donate to making it a necessary match to speech recognition rather than a player.*

Keywords:- Input, Search, keypad, Keyboard.

Introduction

Touch typing or we can say that machine writing was pretend for mechanical typewriters which are the current QWERTY key layout since 1874. While this border is come to age, it survive because of its many helpful aspects. Yet it is not practical for the ever-smaller computing devices that house ever-more advanced functionalities. New alphanumeric interfaces have numeric keypads zoom with letters as on the mobile and the scrawl handwriting characters. In this paper, we state of the alphanumeric input interfaces and suggest the new keyboard which overcome other disadvantages.

Related Work

A large body of same work exists for physical keyboards and typewriters, their description, usability, competence, record, and backgrounds. As the keyboard becomes one of two largest parts of computing devices (next to the display), research on smaller and big mobile text entry types and devices has made great stride. We are not know of a survey that focuses on input interfaces that retain the keyboard symbol yet medicine the qualified device. More related work is referenced from throughout the paper.

Virtual Keyboards

We describe a virtual keyboard as a touch-typing device that does not have a physical part of the sensing areas. That is, the sensing area which looks as a button is not per say a button but as a substitute is planned to act as one. So a sensing area could for case be realized with photo-electric sensors, active finger tracking methods, or a touch pad. The letter is different from a key pad as it does not have elected areas for buttons.

Virtual keyboards that occupy discrete sensing areas for each symbol inherently allow for awareness of a soft keyboard.

Virtual Keyboards: Methods And Devices

The following subsections explain the main characteristics of each VK.

Visual Panel

The Visual Panel consists of a camera and a sheet of paper.

The part of the extensive index finger in position to the paper is situated with computer vision means. The primary function is a mouse pointer, clicking is achieved by sleeping the fingertip in its existing position for three seconds. The authors established text entry by interpret pointer locations as the keys of a keyboard, which were printed on the sheet of paper. An audible notification signals the credit of a character after the 3 second worth interval.

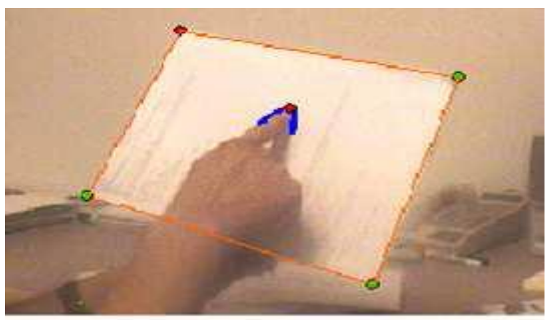

Fig. 1: Visual Panel.

Finger-Joint Gesture Wearable Keypad

The FJG suggest viewing the phalanges of the fingers (besides the thumb) of one hand as the keys on phone keypad. The thumb is used to push the virtual buttons. This is similar to 2 Note: While we are sure about the information reported below, some of the products' existing qualifications are not very complete. We inferred data wherever it was fairly obvious and plainly stated otherwise.

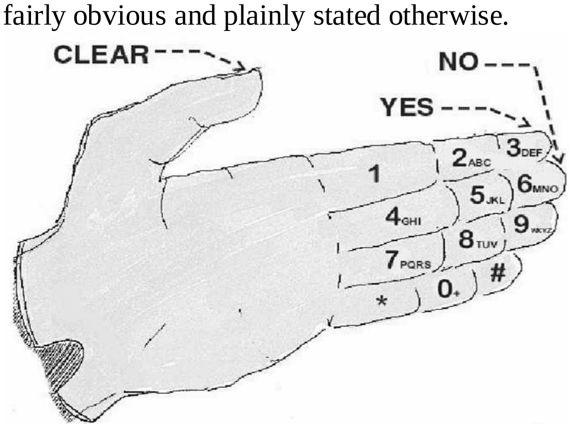

Fig. 2: Gesture Panel.

Drawing Thumb code, but it exclusively relies on word disambiguation to construct more than 12 characters. Yet the problem of this DOF key-to-symbol mapping might be mitigated by the same layout. Also, less composite hand configurations might be less wearing for the user. Just as Thumb code, FJG has no user reaction method beyond skin contact sensations.

Thumb code

The "Thumb code" method described in defines the touch of the thumb onto the other fingers' phalanges of the same hand as key strokes. Consequently there are 12 discrete keys (three for each index, middle, ring finger and pinky). To produce up to 96 different symbols, the role between keys and operators is broken up: The 4 fingers can touch each other in 8 different ways, each basically expressive a mode, or modifier key that affects the map for the thumb touch. Tactile user feedback is implicit when touching another finger with the thumb. A glove implementation was tested by the author.

Fig. 3 Thumb code.

V Type

V Type detects the key blow of each finger "in the air" with a data glove . Dissimilar locations of the key strokes are not renowned, only which finger pushed a key. Instead, disambiguation with criterion statistical methods on the word and sentence level. There is currently no feedback mechanism included into the V Type prototype.

Fig. 4: V-Type.

VKey

Virtual Devices Inc. recently announced a combined projection and recognition VK. Something is known about the device, but press release suggests that visual sensors detect the movement of all ten fingers. VKB device, the VKey also consist of a table top item and reaction is the tactile consciousness of hitting a surface.

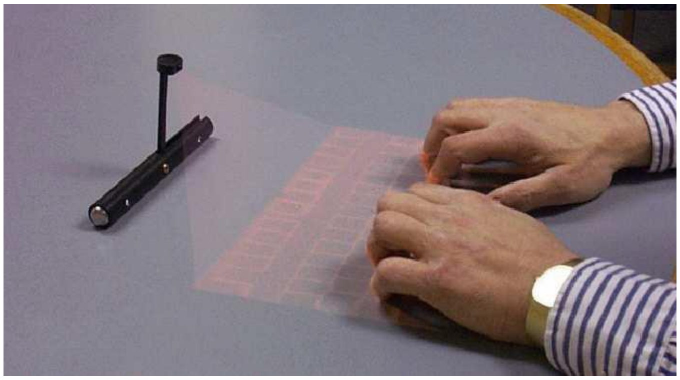

Fig. 5: Vkey panel.

Sense board

The Sense board consists of two rubber pads that slip onto the user's hands. Muscle movements in the palm are sensed (with unspecified, non-invasive means) and translated into key strokes with pattern recognition methods. All further information (obtained from the company's web site) can be found in the tabular comparison. The only feedback other than characters appearing on a screen comes from the tactile sensation of hitting the typing surface with the finger.

Fig. 6: Senseboard.

Future Work

We have provided a qualitative analysis of different virtual keyboards. And we found some disadvantage with the earlier keyboards which were design, so to overcome these problem we make some changes. The logical next step is to make these changes successful.

We use a camera which recognise the character by capturing the any alphabets which was right anywhere in the front of the camera which were attach with the glasses.

Some keyboard also have a problem related with the light so we attach the LED to make character visible , these things can be removal from the glasses easily.

Conclusion

We first gave an overview of the range of input devices and methods for alphanumeric data. We then had a closer look at touch-typing as input method and highlighted its benefits. We found that the trend goes towards retaining the original keyboard metaphor as closely as possible. We have designed a new Gadget i.e., Sun-Key. In this device we have removed some of the drawbacks of previously explained virtual keyboards.

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