# Expanding Input Vocabulary Using Index Finger on and Above Back of Smartphone 

Yusuke Sei<br>University of Tsukuba<br>Tsukuba, Japan<br>sei@iplab.cs.tsukuba.ac.jp

Minto Funakoshi<br>University of Tsukuba<br>Tsukuba, Japan<br>funakoshi@iplab.cs.tsukuba.ac.jp

Buntarou Shizuki<br>University of Tsukuba<br>Tsukuba, Japan<br>shizuki@iplab.cs.tsukuba.ac.jp


#### Abstract

This paper presents a method to expand input vocabulary for smartphones. To this end, our method uses index finger gestures on and above the back of a smartphone. The input vocabulary of our method is in accordance with index finger gestures such as touching and bending/stretching. To enable the detection of these gestures, we built a system composed of the smartphone and ring-like device. In pilot studies using our system, the touching of the back of a smartphone was detected with an accuracy of $94.3 \%$ on average.


## Author Keywords

Mobile device; Smartphone; Touchscreen; Back-of-device interaction; Ring-like device

CCS Concepts
-Human-centered computing $\rightarrow$ Gestural input; Interactive systems and tools;

[^0]
[^0]:    Permission to make digital or hard copies of part or all of this work for personal or classroom use is granted without fee provided that copies are not made or distributed for profit or commercial advantage and that copies bear this notice and the full citation on the first page. Copyrights for third-party components of this work must be honored. For all other uses, contact the owner/author(s).
    AsianCHI'20, April 25, 2020, Honolulu, Hawai'i, USA
    © 2020 Copyright held by the owner/author(s).
    ACM ISBN 978-1-4503-8768-2/20/04. . . \$15.00
    DOI: https://doi.org/10.1145/3391203.3391225

