

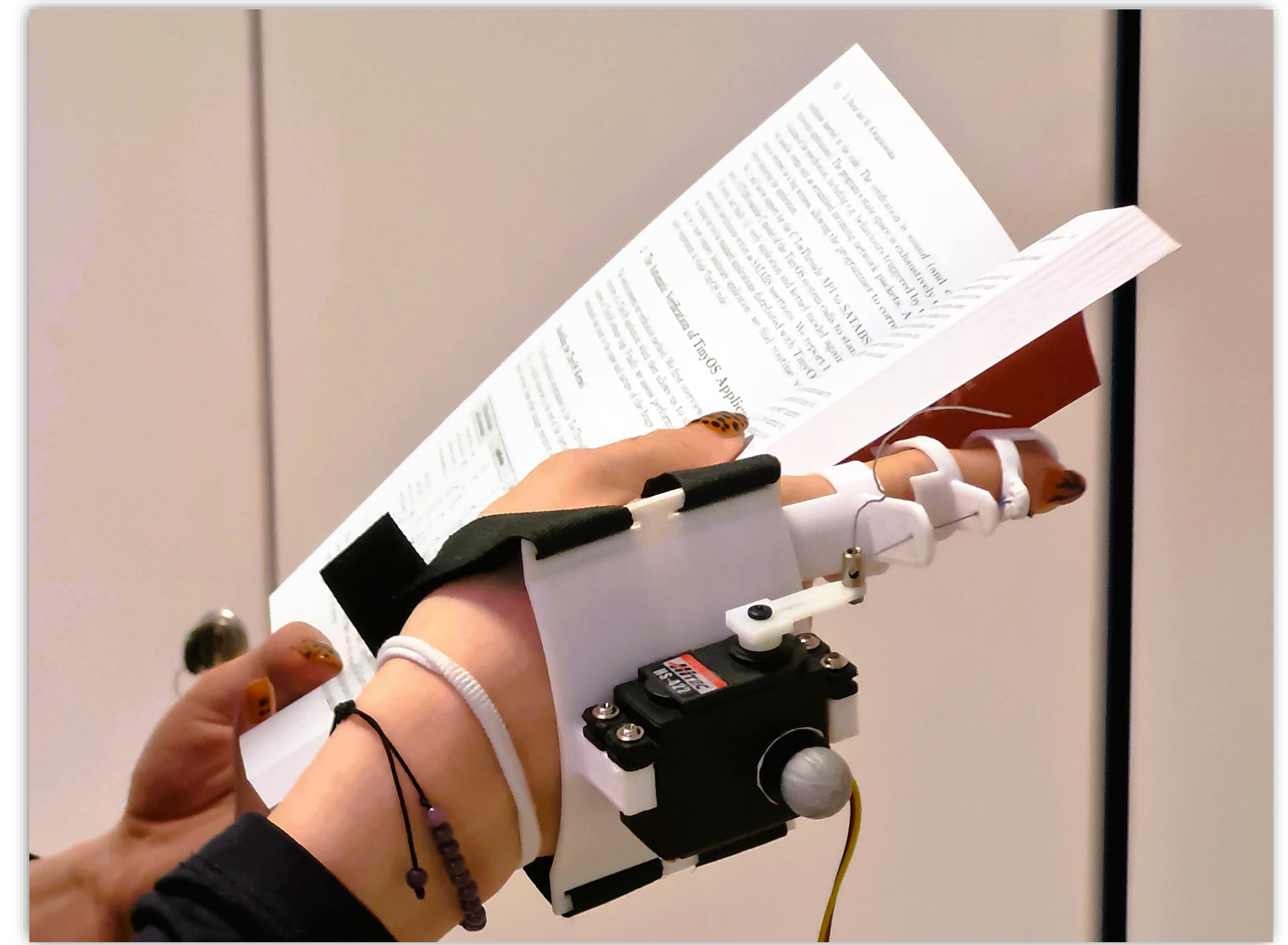
# Fingerhinter Takes Center Stage: User Experience Insights from Informal Encounters with a Finger-Augmentation Device

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## Introduction

We explore a unique approach to mobile notifications by focusing on kinesthetic feedback delivered through dedicated devices that manipulate specific body parts. Unlike traditional methods, such as visual or auditory cues, our study centers on the user's body, introducing a novel intersection of body augmentation, extended reality, and wearable computing. Few studies have delved into the user experience of kinesthetic notifications, especially in real-world scenarios. Our research presents observations from a two-day science fair where we showcased "Fingerhinter", a kinesthetic feedback device, to over 100 participants aged 5 to 50. Their engagement yielded valuable insights, and a sample of 20 participants completed the UMUX-Lite questionnaire to formally evaluate their experience. We also highlight participant feedback on suitable notification types and potential applications for kinesthetic feedback in smart interactive wearables and we proposed scenarios in which artificial intelligence algorithms could help these notifications be delivered in convenient time windows.



Fingerhinter, our finger-augmentation device

## Evaluation study

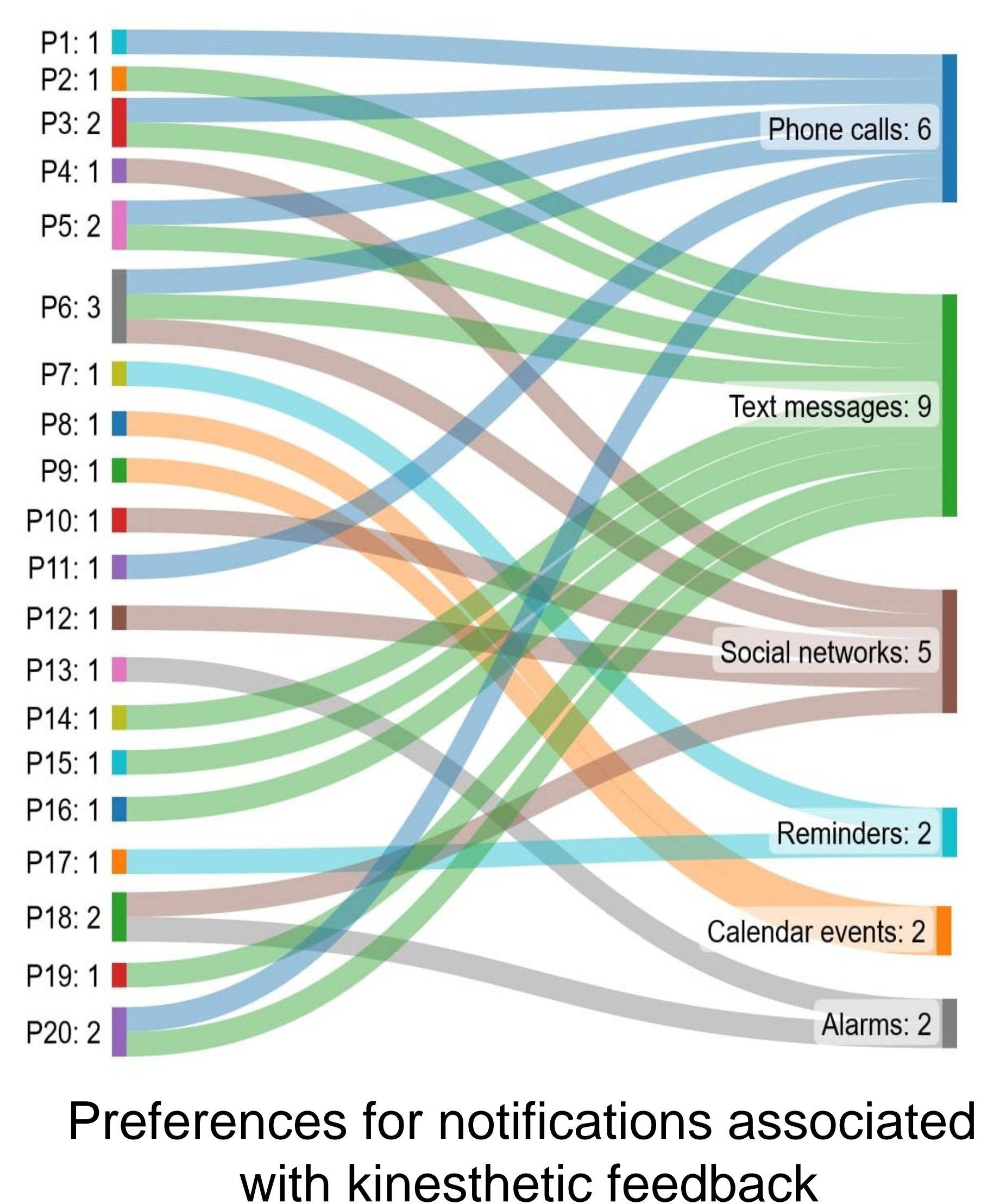
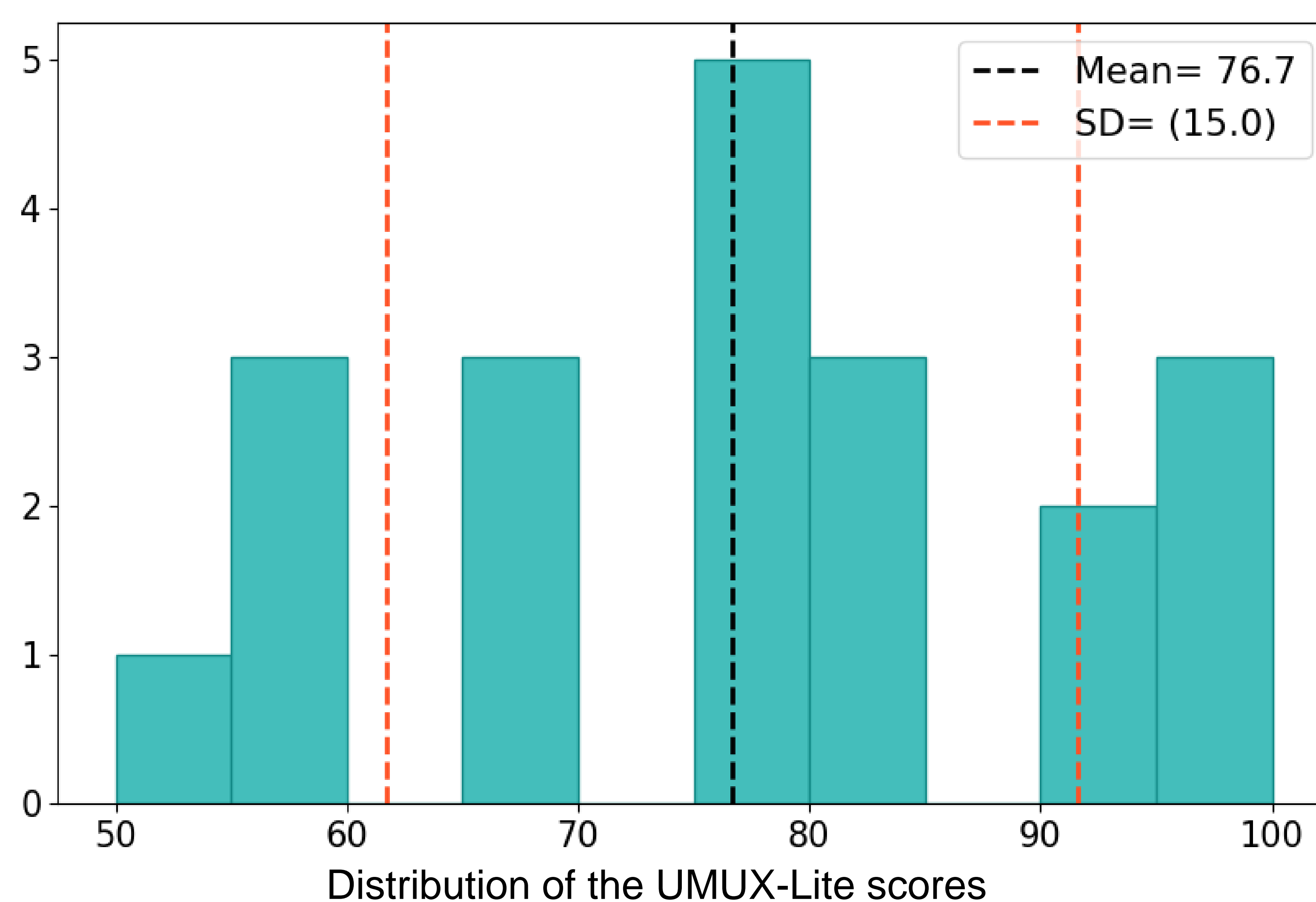
Fingerhinter was tested by a diverse group of over 100 individuals, ranging in age from 5 to 50 years old. Due to the unexpectedly high popularity of the device, a considerable number of individuals were waiting in line to test it. Of this audience, a sample of 20 people (7 male, 13 female, ages between 12 and 45 years old,  $M=24.9$ ,  $SD=11$  years) participated in a more formal evaluation by providing detailed feedback about the device.

The evaluation was done through a short UX questionnaire that included:

- UMUX-Lite (Usability Metric for User Experience), rated on 7-point Likert scales
- "What type of notifications would you prefer to receive through Fingerhinter?"
- "For what purposes would you utilize Fingerhinter?"

## Results

We found that the mean UMUX score was 76.7 ( $SD=15.0$ ) on a scale from 0 (low) to 100 (high usability). Considering that Fingerhinter was merely a prototype with a prominent and conspicuous form factor, we consider this score to be quite commendable. Furthermore, this result reveals a good usability perception after just one first, informal encounter with kinesthetic feedback technology,



## Acknowledgements

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