

VIBRO-THERMAL HAPTIC DISPLAY FOR SOCIO-EMOTIONAL COMMUNICATON

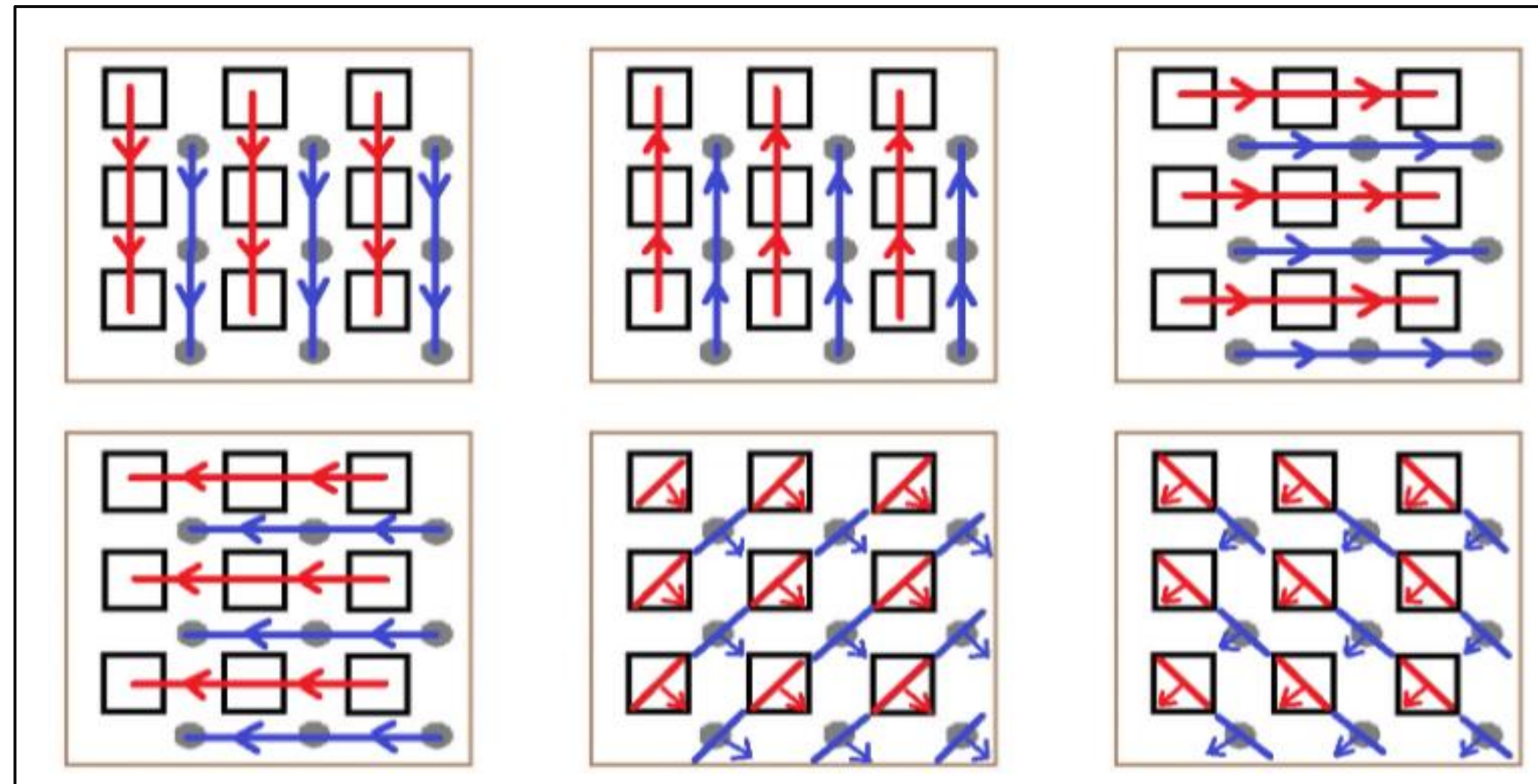
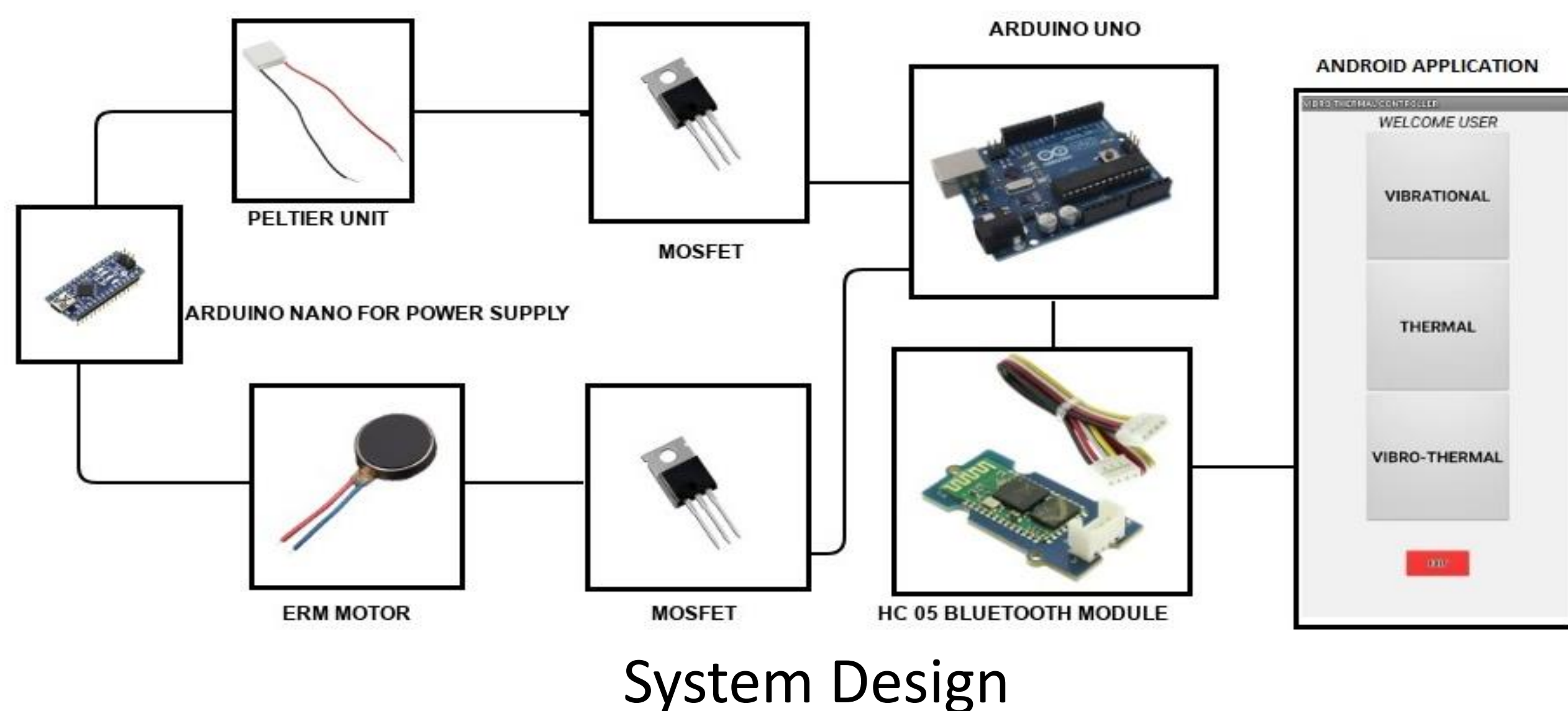
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Research question: Can Vibro-thermal haptics patterns relate to the sense of touch encountered in social interactions?

Abstract

Touch plays an essential social role in fostering and maintaining emotional communication in human relationships, which has changed due to the current pandemic. The research team proposes to create a haptic wearable device capable of generating vibrational/thermal haptic patterns individually and simultaneously. This device explores the social and emotional quotient involved during communication, which is absent in traditional modes like a phone call or a video call. The researcher aims to test this device on the forearm and improve public health, interactions between humans, thereby affecting mental and physical health.



Results:

The results from the human subjects testing show that the patterns like HOLD/SQUEEZE and SINGLE TAP were easily identifiable whereas the UP-DOWN and the DOWN-UP patterns were the most difficult for identification on the forearm of the user.

Conclusion:-

SINGLE TAP and HOLD/SQUEEZE are highly relatable to social interactions. Patterns on the diagonal are less relatable whereas the remaining patterns are least relatable to social interactions experienced by humans on their forearms.

Applications

- Healthcare
- Notifications
- Social Interactions
- Light-weight interactive platform
- Education

Future Work

- To collect more data through extensive human subjects testing.
- To fabricate a smaller wearable version of this device that is flexible as well.
- To test this device during an ongoing phone call or video interaction.
- Different shapes in all three modalities can be tested in different social interactions.

Acknowledgement

Thank you to Dr. Troy McDaniel for the opportunity to work towards this research and to Yatiraj Shetty for the constant guidance during this research.

Android Application:

[VTwear Android Application](#)