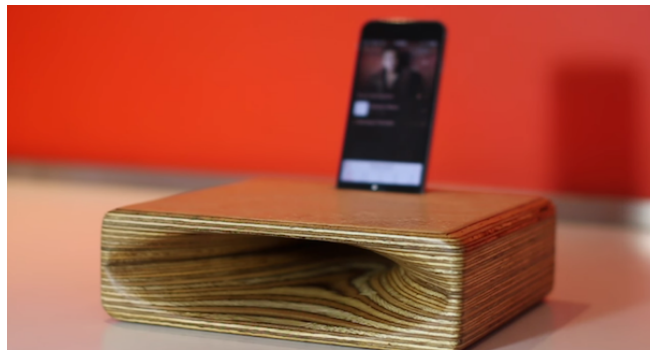




Imperceptible Audio Communication App

Most people carry their smartphones in their pockets wherever they go. These smartphones come equipped with speakers and microphones. There is a potential in exploiting these components to transfer data between devices. This could be used for example to share a link with everyone in the room or receive special offers in a store. In these situations it would be useful to have an easy way to transmit data to closeby smartphones. Other existing technologies such as NFC, Bluetooth and Wifi also allow local communication, but often are not available on all devices or require setup by the users.

Ultrasonic signals can be used to transmit data without disturbing the users. However the speakers and microphones in smartphones are not optimized for this frequency range and therefore only achieve communication over short distance. In a previous project a method has been developed for hiding data in music in the audible frequency range. We also already have a prototype Android app. We now want to utilize this approach for an application.



The goal of this thesis is to continue the prototype app to improve the signal processing and robustness to transmission errors and finally build a useful app.

Requirements: Programming and signal processing experience is an advantage. There will be weekly meetings with your supervisors to discuss the progress and open questions.

Interested? Please contact us for more details!

Contacts

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