



Adaptability in Hearing Aids Using the Internet of Things

Oticon Opn

First hearing aid to connect to the internet

The Oticon Opn can connect to other
Internet of Things (IoT) devices





Why do we care at all about hearing aids and their use to society?

Hearing loss can lead to stages of dementia

Less than 25% of those who have hearing aids actually use them

Top leading reason users do not wear their hearing aids, are due to the hearing aids gaining no benefit during noisy environments

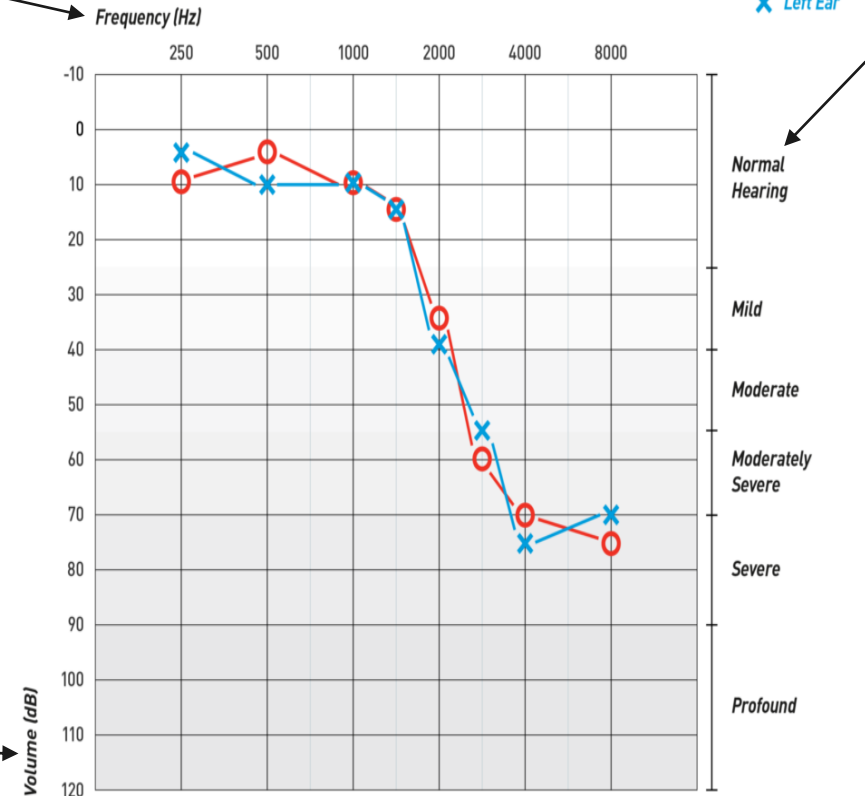
Fitting Procedures

Audiograms

Quantitative relationships - Measuring hearing loss

Some tools used to help measurements are pure tones, simulated soundscapes (e.g. drill hammers, baby crying)

Pure Tone Audiogram

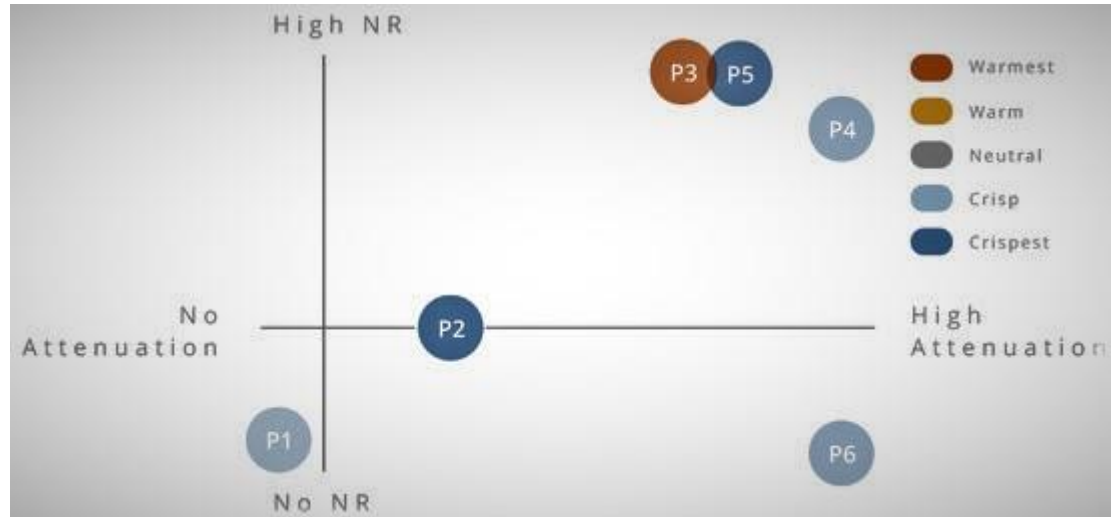


The Study

5 Participants - each had an iPhone 4S or a newer model

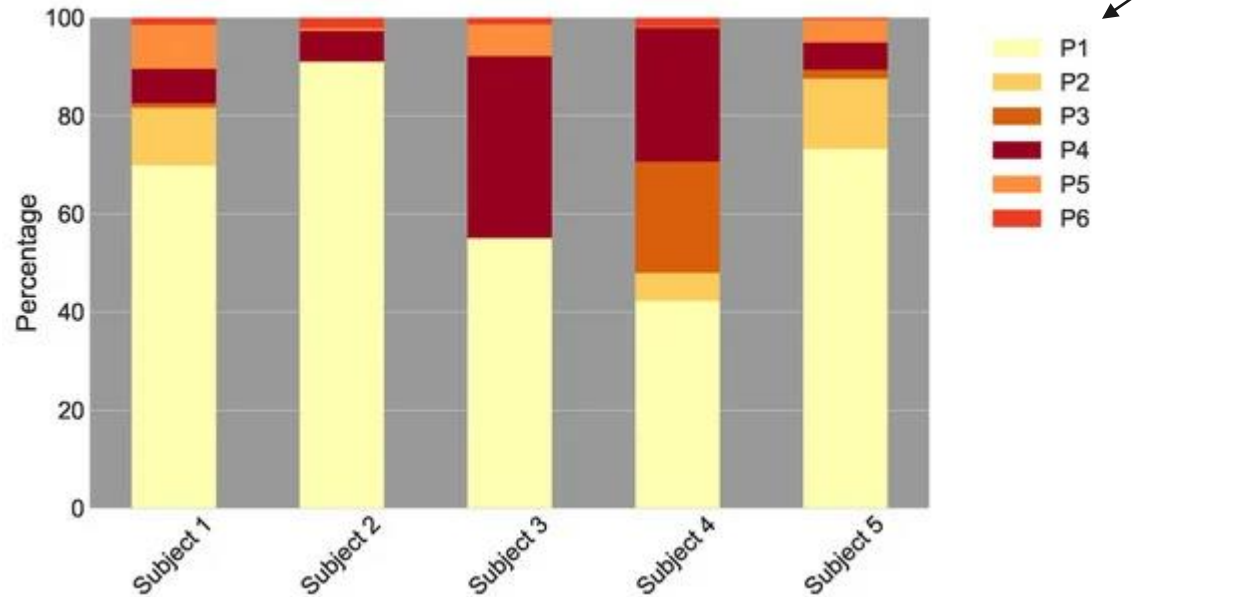
Experiment lasted 9 months

Brightness and noise reduction



Program Settings: The further top right, the better signal-to-noise ratio (narrowly focused)

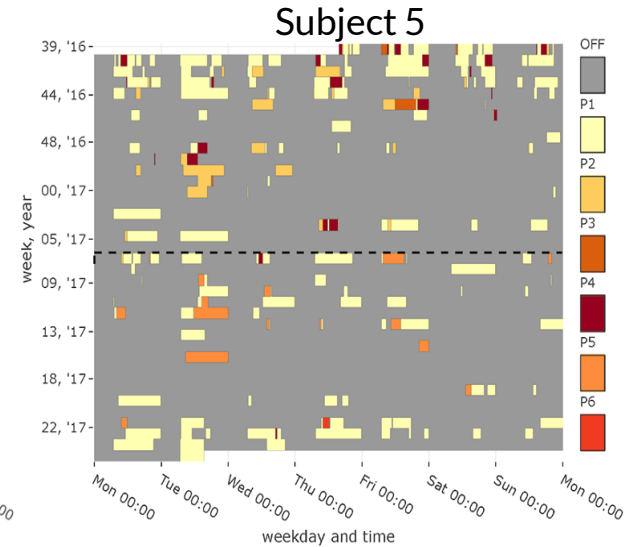
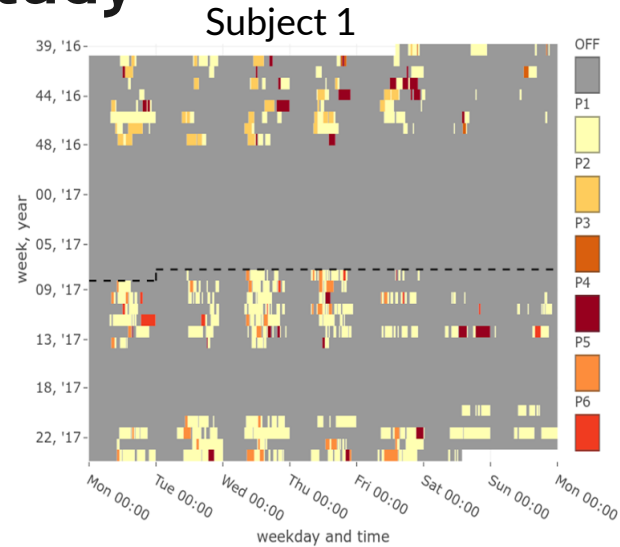
Program Setting Percentage



Results From Study

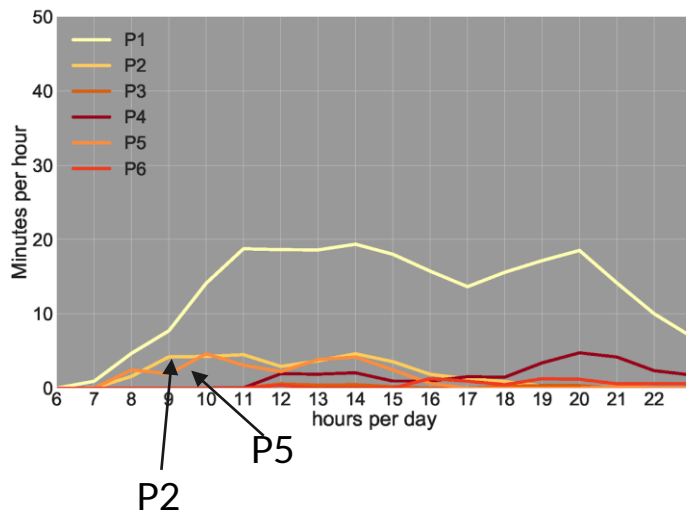
Coping strategies

Weekend vs Weekday

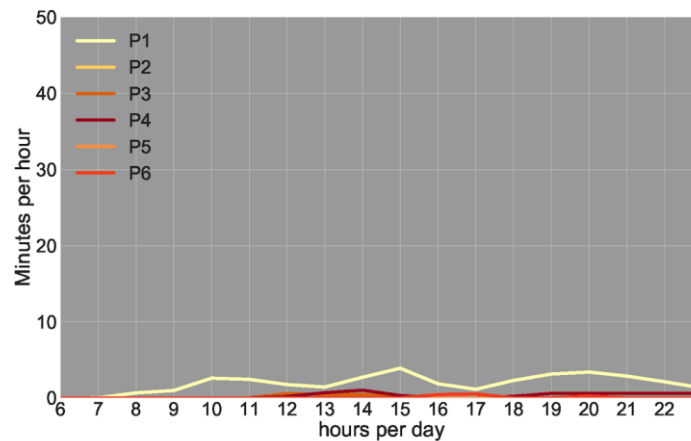


Results From Study

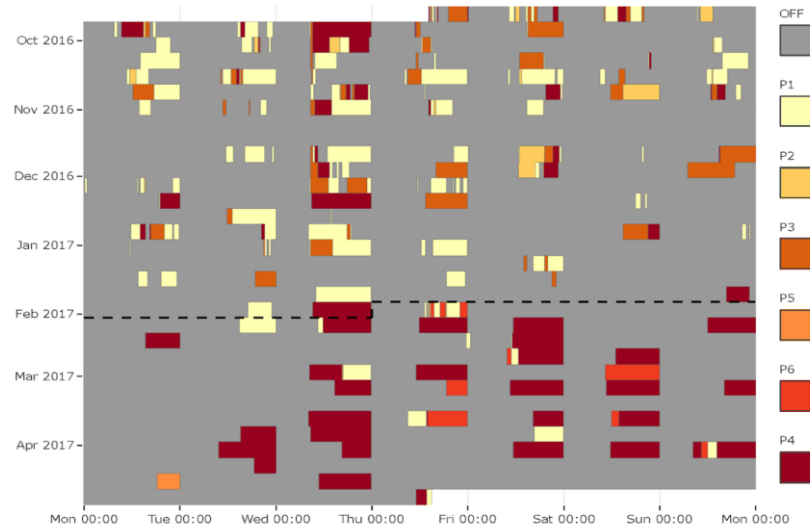
Average Daily Use (Subject 1)



Average Weekend Use (Subject 1)



Results From Study





Discussion/Conclusion

Through this data, we can visualize specific patterns amongst the individual

In an ideal world, this data can help with machine learning and augment sounds suitable for the user

This type of data (if it hasn't already) will help Health Care Professionals with their fitting process



Questions?