Inferring User Intents from Motion in Hearing Healthcare

Sensors in our phones and wearables, leave digital traces of our activities. With active user participation, these devices serve as personal sensing devices, giving insights to human behavior, thoughts, intents and personalities. We discuss how acoustical environment data from hearing aids, coupled with motion and location data from smartphones, may provide new insights to physical and mental health. We outline an approach to model soundscape and context data to learn preferences for personalized hearing healthcare. Using Bayesian statistical inference we investigate how physical motion and acoustical features may interact to capture behavioral patterns. Finally, we discuss how such insights may offer a foundation for designing new types of participatory healthcare solutions, as preventive measures against cognitive decline, and physical health.

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