Navigating the Aural Web: Listening-based Back Navigation in Large Architectures

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The current paradigm of web navigation structures interaction around the visual channel and thus poses obstacles to users in two eyes-free scenarios: mobile computing and information access for the visually-impaired. The common thread of these scenarios is the inability to efficiently navigate complex information architectures due to the limited perceptual bandwidth of the aural channel. To address this problem, we are conducting a long-term research program aimed at establishing novel design strategies for aural navigation in complex information architectures typical of the web.

As first line of results, we introduce topic- and list-based back: two navigation strategies to enhance aural browsing. Both are manifest in Green-Savers Mobile (GSM), an aural mobile site. A study (N=29) compared both solutions to traditional back mechanisms. Our findings indicate that topic- and list-based back enable faster access to previous pages, improve the navigation experience and reduce perceived cognitive load. To expand this line of work, we have also completed the evaluation of topic- and list-based back with blind and visually-impaired users of screen readers (N=10). The preliminary findings of the study, conducted in close collaboration with the Indiana School for the Blind in Indianapolis are promising. Topic- and list-based back decrease the number of web pages visited in aural browsing, and increase the self-rated navigation experience with respect to traditional back mechanisms. The proposed designs apply to a wide range of content-intensive, ubiquitous web systems.