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Saving Face: A Gesture Recognition Application to Fight the Spread of COVID-19

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In the age of COVID-19, "don't touch your face" is easier said than done. The Saving Face project transforms everyday wired earbuds and smartphones into a sonar system to alert people when they touch their faces. Unlike other proposed systems, Saving Face is a scalable solution as it only relies on wired earbuds and can thus be used by billions of smartphone users worldwide. We work to develop signal processing and machine learning approaches to (1) analyze distortions in ultrasound signals to detect face touches and (2) ensure widespread compatibility with off-the-shelf earbuds and smartphones. Preliminary results and user studies (N=10 participants) demonstrate that the Saving Face system is able to detect face touches with 94.2% accuracy. We expect Saving Face to serve as a scalable, effective approach to help reduce the transmission of surface-based pathogens and combat the COVID-19 pandemic.

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