

eMir: Digital Signs that react to Audience Emotion

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Abstract: In this paper we present eMir, digital signage (public electronic displays) that show human faces which react to audience emotion. Using a camera installed at the sign, the system observes the audience and detects whether someone watches the display via face detection software. The face detection is able to classify facial expressions and determine gender. This information is used to let a human character on the screen react accordingly and encourage interaction with the face/sign. The system has been deployed for one month on a digital sign in a university building. We present experiences with the system, our findings from the collected interaction data and results from interviews with eight users.

1 Introduction

Public electronic displays become more and more important as one can conclude from the increasing number of displays installed in public places and buildings. Digital signage is a cheap and easy way to present customizable information. Shopkeepers are increasingly installing mid- to large-scale displays in order to attract the customers' attention and advertise new products or special offers. But there are also places where displays are installed for non-commercial purposes such as information or entertainment. These places are for example waiting areas, e.g. at the doctors or at the citizen bureau. Studies have shown that public displays are often not able to attract the passerbys' attention except some displays installed in waiting areas[1]. Although there are style guides for display size, height, color composition of the content and the content itself[2] to make displays more perceivable many digital signs are still not noticed. We started exploring how to make displays more perceivable and enjoyable that people get attracted by it. In a field study we presented content which was rated by the view time of the users collected with face detection software[3]. This was a kind of unconscious, indirect interaction because the user didn't know that he was influencing the content to be shown. In our current study we try to find out, how videos of human faces that mirror the users' emotion and gender can attract the users attention and lead to direct interaction. As a first step, we want to examine how users react to our electronic mirror system (eMir) and if the people try to interact with it. We think that in future interaction with digital signs is one way to make digital signage more attractive and perceivable.