

Implementing Embedded Web Interaction System for Conferences

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Abstract

Conference presentations are typically one-directional, followed by interaction in the form of audience feedback and discussion. This has the drawback that the audience can forget the questions and statements they were planning to say by the end of the presentation. The time is limited, and only the most vocal might have the opportunity to speak. We were interested how we could help the situation without disturbing the flow of the presentation, and so that speaker would also have written record of given questions.

There have been positive results from increasing classroom interaction in teaching environments with online systems. We tried to apply the findings from the classroom systems to a conference environment by designing an online interaction system. This system allows interactive and real-time text-based communication from the audience seamlessly without interrupting the presentation. It also records the messages, which can be processed during or at the end of the conference.

The online interaction system is web-based and is integrated into the conference presentation environment with a large public screen that shows feedback or questions from the audience. The presenter can immediately choose to reply to some points, or leave them to the end of the lecture without having to stop the presentation. There are options also for marking certain questions answered and hiding others from immediate view. The audience feedback interface is a separate web page that can be accessed through locally available networks. There are no dedicated client machines, because it is assumed that increasingly the audience members have some kind of web-enabled mobile device with them.

In addition to ordinary web servers, the system can be run on selected embedded devices by simply reflashing them. The advantage of providing bundled software on embedded devices is that they work almost automatically from the user point of view. Automatic configuration is important, because conferences are often held in temporary environments. Difficult setup might discourage the use of the system. In addition to providing the connectivity for mobile users and running the software, some devices can also provide video output for the public screen thus providing every that is needed.

We present the designed system and its realization in an embedded system. The system provides interfaces to both wired and wireless networks, enabling users to connect through either Internet or the integrated wireless access point. Internet connection is not a requirement, and the device can also be used as a standalone system. While it does not have an integrated display adapter, it supports a VGA-USB adapter for connecting the display device for the public screen. The remaining USB port can be used to connect a control device for moderating the screen. The startup is automatic without needing user interaction: The device automatically searches for Internet connection, establishes the access point and sets up the display, if connected, while making the feedback site available through as many networks as possible.

Index Terms: learning, web, mobile, wireless.