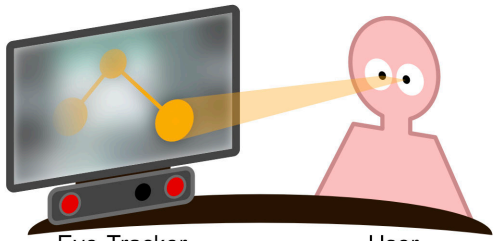
What is Eye-Tracking?



The eye-tracker illuminates the eyes of the user with infrared light and a camera records the eye movements. A calibration provides an estimation of fixations of the user on the screen. We use the fixations for interaction with virtual buttons in the graphical interface of GazeTheWeb.

Does GazeTheWeb work?

GazeTheWeb has been evaluated as part of the MAMEM project at three clinical cohorts in Athens, Thessaloniki and Tel Aviv, in two trial phases.

At the first trial phase in February 2017, 18 participants with motor impairment successfully performed dictated tasks in the World Wide Web.

The second phase has taken place in spring 2018, where 30 participants with motor impairment operated GazeTheWeb for one month at their homes on their own behalf.

The system allowed the participants to browse the World Wide Web, perform communication, access entertainment and retrieve information.

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Photograph: Tasos Papazoglou - Chalikia

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How can people with motor impairment interact with the *World Wide Web*?

GazeTheWeb

Explore the Web with your eyes!

W4A

Winner of the Web for All Accessibility Challenge

WWW 2017

Honourable Mention for Technical Approach

DIGITAL IMAGINATION CHALLENGE

Scored Third for Digital Impact

/gazetheweb

www.gazetheweb.com

GazeTheWeb

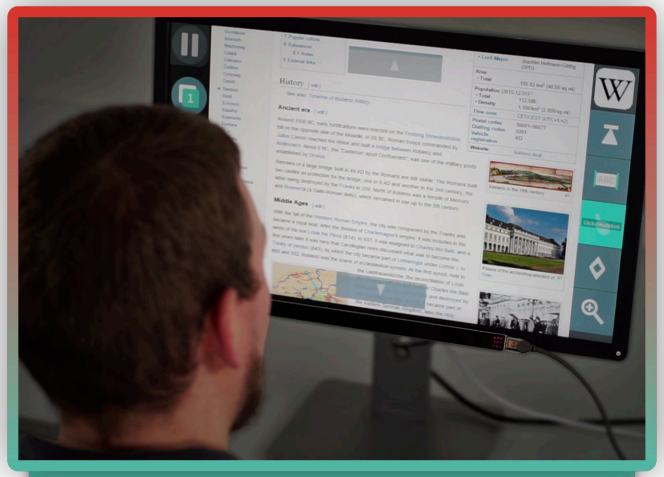
Explore the Web with your eyes!

Human

1

Feedback for User

- Visual content of the Web page
- Interaction is adapted for gaze-control through Web page context
- Audio feedback at interaction



Eye-Tracking System

Sensor Input by User

- Camera-based eye-tracking device provides gaze of user on screen
- Further input modalities can be added (EEG, voice, touch,...)

2

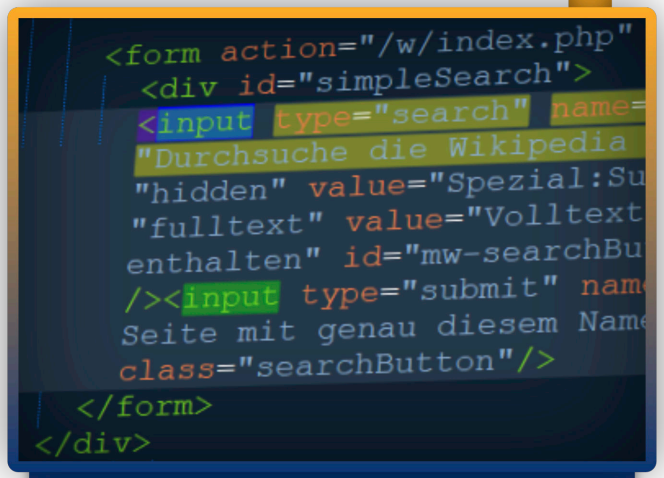
Gaze-Controlled Browser

Web

4

Context of Web Page

- Identification of interactive Web page elements (input, video,...)
- Extraction of further Web page information (page height, scrolling,...)



Web Engine

Commands for Web Page

- User activates virtual buttons in graphical interface through gaze fixation exceeding a dwell time
- Browsing commands are forwarded to the Web Engine

3