Fakultät für Ingenieurwissenschaften, Informatik und Psychologie

Freitag, den 4. Juli 2025, 10:00 Uhr
Universität Ulm, Oberer Eselsberg
Gebäude 47, Raum 0.501 (plus online auf Anfrage)

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stellt das folgende Dissertationsvorhaben vor

Using gaze and eye information to recognize deceptive intentions

The human eye not only sees, it communicates. Yet in deceptive contexts, intentions often remain hidden. This project explores whether gaze and eye movements can serve as reliable indicators of deceptive intentions. Across seven interconnected studies, the present project explored this question using both stationary and mobile eye-tracking technologies. Following an initial literature review on deception and gaze behaviours, we conducted a series of experimental studies including a modified Concealed Information Test examining different forms of deception (concealing, faking, revealing a card) and manipulations of social presence, ranging from pictures to interactive human “mentalists”. We also investigated deception behaviours in social game context (liar’s dice), comparing interactions with humans versus computer opponents. These dual-interaction experiments were made possible by the use of mobile eye-trackers, such as the Neon from Pupil Labs. To evaluate whether such devices offer sufficient spatial accuracy for fine-grained gaze analysis, such as determining where participants look on a face (e.g., eyes, mouth, nose), we conducted a performance comparison between the Neon and the high-precision Eyelink 1000 across a range of eye movement tasks. Finally, we applied machine leaning techniques to predict deceptive intentions from gaze and pupil data collected previously. Together, these studies offer novel insights into how deception influences visual behaviour, how social dynamics modulate these effects, and how advances in eye-tracking and data analysis may enable real-time deception detection in ecologically valid contexts.

Ulm, den 02.07.2025

gez. Prof. Dr. Anke Huckauf