Nazwa przedmiotu: Eyetracking in psychology…….

Prowadzący: …dr Bibianna Bałaj……

1 Aim of the course

The aim of the course is to provide students with the theoretical and practical application of eyetracking in psychology (research of visual attention and other cognitive processes, visual interaction, marketing research, testing of drivers and pilots, HCl, support people with physical disabilities).

2 Entry requirements

R1 - the ability to analyze scientific texts;

R2 - basic computer skills;

3 Outcomes for the course

Knowledge

After completing the course the student should acquire knowledge of eyetracking in sufficient detail to enable a critical analysis of scientific texts on this subject, the proper and critical treatment of the eye-movement data. He knows areas of using eyetracker, can identify the cognitive processes involved in the visual perception, shows an awareness of bottom-up and top-down mechanisms of visual attention. Also knows methods of analysis and presentation of the results of psychological research conducted using eyetracker.

Skills

The student is able to analyze a study using eyetracker. He is reading scientific articles on eyetracking research with an understanding. Is able to make critical analysis of the interpretation of the results of eye-movement research.

Attitudes

Classes are designed to shape the awareness of the scope of eyetracker studies, cognitive processes involved in the visual perception and gaze interaction.

An important personal and social competence formed in the process of acquiring knowledge and skills in research using eyetracker is the ability to work in team and collective problem solving.

4 Teaching methods

Methods and teaching materials

The lecture, presentation, presentation of the eyetracker in action, case study: analysis of studies using eyetracker. Teaching aids: two laptops, eyetracker, projector,

5 Course content

1 Introduction to Eye-tracking studies (methods of historical and contemporary)

2 Eye-tracking application to psychological research

3 Methods of analysis of eye-movement data

4 Eye-tracking study design

5 Visual Attention (visualization of results of eye-movement data analyzes)

6 Imagination and eye movements

7 Marketing and Advertising

8 Eye-tracking application in visual interaction with a computer and other devices

9 The human factor (studies of pilots, drivers and sailors)

10 Case Studies

6 Evaluation criteria of the learning outcomes

Passing an oral exam covering the whole of these issues (including the interpretation of the eye-movement parameters). Presentation of the critique of a research article (from the list) describing the results of eyetracking research.

7 Basic and supplementary literature

Basic literature

1. Liversedge, S., Gilchrist, I., Everling, S. (2011). The Oxford handbook of eye movements. Oxford: Oxford University Press.
2. Duchowski, A. T. (2007). Eye Tracking Methodology: Theory and Practice. London: Springer.
3. Nielsen, J.; Pernice, K. (2010). *Eyetracking Web Usability*. Berkeley: New Riders Press.
4. Majaranta, P. i in. (red.) (2011). *Gaze Interaction and Applications of Eye Tracking: Advances in Assistive Technologies*. Hershey, PA, USA: IGI Global.

Supplementary literature

1. Bałaj, B. (2012). Analizy ilościowe i jakościowe danych okoruchowych w psychologii poznawczej. W: *Zastosowania statystyki i data mining w badaniach naukowych.* Kraków: StatSoft Polska. s. 43-58. ISBN 978-83-88724-63-3.
2. Bałaj, B., Francuz, P. (2012). Siła podobieństwa w ruchach oczu wykonywanych podczas oglądania i wyobrażania sobie obiektów – czynniki modyfikujące. *Polski Przegląd Medycyny i Psychologii Lotniczej*, 2(18), 63-76.
3. Jardanowski, P., Chojnacki, W. (2009). Obszary zainteresowań (ang. area of interest - AOI) jako metoda analizy wyników badania eye tracking. *Interfejs użytkownika - Kansei w praktyce*, 107-118. http://symetria.pl/blog/files/kansei2009_Jardanowski_Chojnacki.pdf
4. Petrykowski, J., Karwatka, T. Eye tracking w badaniach użyteczności. Janmedia. http://www.janmedia.pl/upload/wysiwyg/pdf/eye_tracking_w_badaniach_uzytecznosci-Jakub_Petrykowski-Janmedia.pdf
5. Pasikowska, A. (2009). Tajniki eyetrackingu. http://interaktywnie.com/biznes/artykuly/usability/tajniki-eyetrackingu-4554
6. Suchta, T. (2002). Eye Tracking. Gdzie spoczywa oko konsumenta. *Modern Marketing*. http://www.modernmarketing.pl/index.php?pg=arta&magnr=200209&artnr=02&artpg=1
7. Drewes, H. (2010). Eye Gaze Tracking for Human Computer Interaction, http://edoc.ub.uni-muenchen.de/11591/1/Drewes_Heiko.pdf
8. Zapała, D., Bałaj, B. (2012). Eye Tracking and Head Tracking – The two approaches in assistive technologies. W: *Sborník příspěvků z mezinárodní vědecké konference*, s. 2406-2415. Hradec Králové, Česká republika: MAGNANIMITAS. ISBN 978-80-905243-3-0.
9. Szubielska, M., Bałaj, B., Fudali-Czyż, A. (2012). Estetyczny odbiór fotografii poprzez stereotyp umysłowej niepełnosprawności twórcy. *Psychologia Społeczna*, 4, 342-357.
10. Bałaj, B. (2012). Paivi Majaranta, Hirotaka Aoki, Mick Donegan, Dan Witzner Hansen, John Paulin Hansen, Aulikki Hyrskykari, Kari-Jouko Raiha (Eds.) "Gaze Interaction and Applications of Eye Tracking: Advances in Assistive Technologies". Hershey, PA: IGI Global, 2012, ss. 382 (recenzja). *Roczniki Psychologiczne*, 15(3), 109-111.