

Image-based factors and pre-employment assessment testing for x-ray image interpretation

Original title / Originaltitel

Bildbasierte Faktoren und Selektionstests für Luftsicherheitsbeauftragte

Summary / Zusammenfassung

Visual inspection of X-ray images of passenger bags is a demanding task. Aviation security screeners must decide within a few seconds whether an X-ray image contains prohibited items or not. In this project we have identified image-based factors that affect screener performance substantially. Objects are more difficult when depicted from unusual viewpoints, when superimposed by other objects (effect of superposition), and when shown in cluttered bags (effect of bag complexity). There are large differences between people regarding their visual abilities to cope with these effects. We have developed the X-Ray Object Recognition test (X-Ray ORT), which is a reliable and valid instrument to measure visual abilities needed for the x-ray image interpretation task. The benefits of using such a test for pre-employment assessment is investigated in this project.

Weitere Informationen unter www.psychologie.unizh.ch/vicoreg/research/

Publications / Publikationen

Hardmeier, D., Hofer, F., & Schwaninger, A. (2006a). Increased detection performance in airport security screening using the x-ray ort as pre-employment assessment tool. Proceedings of the 2nd International Conference on Research in Air Transportation, ICRAAT 2006, Belgrade, Serbia and Montenegro, June 24-28, 2006, 393-397. [PDF]

Hofer, F., Hardmeier, D., & Schwaninger, A. (2006). Increasing airport security using the X-ray ORT as effective pre-employment assessment tool. Proceedings of the 4th International Aviation Security Technology Symposium, Washington, D.C., USA, November 27 – December 1, 2006, 303-308. [PDF]

Hardmeier, D., Hofer, F., & Schwaninger, A. (2005). The x-ray object recognition test (x-ray ort) – a reliable and valid instrument for measuring visual abilities needed in x-ray screening. IEEE ICCST Proceedings, 39, 189-192. [PDF]

Schwaninger, A., Hardmeier, D., & Hofer, F. (2005). Aviation security screeners visual abilities & visual knowledge measurement. IEEE Aerospace and Electronic Systems, 20(6), 29-35. [PDF]

Schwaninger, A., Hardmeier, D., & Hofer, F. (2004). Measuring visual abilities and visual knowledge of aviation security screeners. IEEE ICCST Proceedings, 38, 258-264. [PDF]

Schwaninger, A. (2003b). Evaluation and selection of airport security screeners. AIRPORT, 02/2003, 14-15. [PDF]

Weitere Informationen unter www.psychologie.uzh.ch/vicoreg/publications/index_byarea.htm

Keywords / Suchbegriffe

Airport security, pre-employment assessment, selection tests

Project Leadership and Contacts / Projektleitung und Kontakte

Dr. A. Schwaninger (Project Leader)

Other Links to external Webpages / Andere Links zu externen Webseiten

<http://www.psychologie.unizh.ch/vicoreg/>

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