

Evaluasi ikon mobil dengan menggunakan pohon keputusan = Evaluation of car icons using a decision tree

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Abstrak

[ABSTRAK

Dalam mengemudi mobil, pengemudi harus membagi konsentrasi antara mengemudi dan mengamati ikon dalam mobil, untuk itu diperlukan ikon yang dapat dikenali dengan baik untuk mengurangi beban mental dan waktu operasi pengemudi mobil. Penelitian ini mengembangkan metode untuk mengidentifikasi penyebab ikon tidak dapat dikenali dengan baik, sehingga dapat menjadi masukan untuk pengembangan ikon baru. 34 ikon yang tidak dapat dikenali dengan baik dengan recognition rate dibawah 80% dalam penelitian sebelumnya oleh C.-F. Chi and Dewi (2014) diuji kembali kepada 14 pengemudi pengalaman melalui wawancara yang dilakukan oleh Hsieh (2014). Pendapat mengenai ikon mobil yang tidak dapat dikenali dengan baik disurvei berdasarkan 3 tahapan pemahaman ikon (Campbell et al, 2004) dan 3 aspek memahami objek alphanumeric (Sanders & McCormick, 1993), yang kemudian digunakan untuk mencari kemungkinan penyebab tidak dikenalnya ikon-ikon ini. Pertanyaan dalam wawancara meliputi apakah ikon ini dapat dilihat, familier, bermakna, menarik dan apabila ada saran untuk desain alternative. Semua pertanyaan akan dibagi menjadi pertanyaan ya/tidak untuk aturan pembuatan keputusan. Sebuah tabel pembuatan keputusan digunakan untuk mengorganisir aturan keputusan sesuai dengan 7 klasifikasi ikon oleh C.-F. Chi and Dewi (2014), dan aturan ini dipastikan sesuai dengan logika dan mutually exclusive (Chi, Tseng, & Jang, 2012). Dengan menggabungkan ikon yang diuji dengan aturan keputusan, tabel keputusan dapat diubah menjadi pohon keputusan untuk mengilustrasi dan memfasilitasi perbaikan desain dari ikon-ikon yang tidak dikenali ini. Ikon-ikon baru dibuat untuk menggantikan ikon-ikon yang tidak dikenali untuk membuktikan bahwa pohon keputusan merupakan sebuah metode efektif untuk evaluasi dan desain ulang.

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ABSTRACT

A comprehensible icon can reduce mental load and operation time for the driver to time share between driving and icon recognition. This study developed a diagnostic tool to identify the causes of poorly recognised icons that could be used for the redesign of existing icons. Thirty-four poorly recognized icons were selected for the current experiment because they had a below 80% recognition rate by experienced drivers in a previous study (C.-F. Chi and Dewi (2014). Fourteen experienced drivers participated in the experiment conducted by Hsieh (2014), where each participant was asked to review all poorly recognized icons one by one based on three stages of icon comprehension (Campbell et al, 2004) and the three aspects of understanding alphanumeric objects (Sanders & McCormick, 1993) to explore possible causes for poor recognition of these icons. Specific questions include whether each icon is visible, familiar, meaningful, and attractive, and if the participants have any suggestion for a better alternative design. All the answers can be further divided into more specific Yes/No decision rules. A decision table is used to organize all the decision rules based on seven categories of icon design, and to ensure these decision rules are logical and mutually exclusive (Chi, Tseng, & Jang, 2012). By associating all the tested icons with the decision rules, the decision

table can be transformed into a decision tree illustration to facilitate the redesign of these poorly recognized icons. A new set of redesigned icons would be created to replace all the poorly recognized icons to prove that the decision tree is a very effective diagnostic tool for icon evaluation and redesign. A comprehensible icon can reduce mental load and operation time for the driver to time share between driving and icon recognition. This study developed a diagnostic tool to identify the causes of poorly recognised icons that could be used for the redesign of existing icons. Thirty-four poorly recognized icons were selected for the current experiment because they had a below 80% recognition rate by experienced drivers in a previous study (C.-F. Chi and Dewi (2014). Fourteen experienced drivers participated in the experiment conducted by Hsieh (2014), where each participant was asked to review all poorly recognized icons one by one based on three stages of icon comprehension (Campbell et al, 2004) and the three aspects of understanding alphanumerical objects (Sanders & McCormick, 1993) to explore possible causes for poor recognition of these icons. Specific questions include whether each icon is visible, familiar, meaningful, and attractive, and if the participants have any suggestion for a better alternative design. All the answers can be further divided into more specific Yes/No decision rules. A decision table is used to organize all the decision rules based on seven categories of icon design, and to ensure these decision rules are logical and mutually exclusive (Chi, Tseng, & Jang, 2012). By associating all the tested icons with the decision rules, the decision table can be transformed into a decision tree illustration to facilitate the redesign of these poorly recognized icons. A new set of redesigned icons would be created to replace all the poorly recognized icons to prove that the decision tree is a very effective diagnostic tool for icon evaluation and redesign.]