



اَوْبُو تَيْكُونُو لَوِي كِي مَبَارَا
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DEVELOPING FRAMEWORK FOR NATPHORIC COMPUTER-AIDED WEB-BASED KANSEI ENGINEERING

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*A thesis submitted in fulfilment of the requirements
for Master of Science (Computer Science) dissertation*

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Msc. (Computer Science) CS777

Faculty of Computer and Mathematical Sciences

Universiti Teknologi MARA

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Declaration of Authorship

I hereby declare that the work in this dissertation was carried out in accordance with the regulations of Universiti Teknologi MARA. It is original and is the result of my own work, unless otherwise indicated or acknowledged as referenced work. This topic has not been submitted to any other academic institution or non-academic institution for any other degree or qualification.

In the event that my thesis is found to violate the conditions mentioned above, I voluntarily waive the right of conferment of my degree and agree to be subjected to the disciplinary rules and regulations of Universiti Teknologi MARA.

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Abstract

Sophisticated consumers and high competitive environment has forced designers and manufacturers to realize the importance of consumers emotion in creative product design. The design must be able to incorporate high acceptance and have persuasive power. Kansei Engineering (KE) is a technology that provides an insight into consumers psychological feelings when interacting with a product. KE is able to capture and determine the relationship between these feelings with product characteristics. These characteristics are then translated into the design and creation of products that can entice consumers to buy the product, hence increasing the marketability of the product in a highly competitive market. KE technological process generally consists phases; determination of specific domain and target market; Kansei evaluation; Kansei analysis, and formulating design guideline based on the interpretation of the data analysis. KE analysis and interpretation requires a Kansei expert to determine a set of related Kansei Words that identifies significant consumer and product relationship factor. However, there are not many kansei experts in the world today and there is no rule of thumb or specific guide in the process. In this research, Natphoric algorithm is used in order to simulate how the experts find the significant factor of emotions. The Natphoric algorithm learns the process done by training with sets of training data from previous KE research works. This research proposes a Natphoric algorithm to capture and simulate the expert kansei knowledge. The Natphoric algorithm is formulated to handle the complexity and flexibility in KE. To realize the development of computer-aided KE system, a framework for automated KE is designed. The designed framework incorporated a step-by-step technique of the use of KE Type 1 and automate the word classification process that usually requires expertise in KE. A prototype is developed to test the framework. Result shows that the automated KE prototype is able to produce similar result with the expert. The research outcome will benefit the product inventors and designers, especially in Malaysia, where there is in need of a good design method to produce innovative product. The invention of this system will help to boost the movement towards achievement of the objectives.