

UNIVERSITI TEKNOLOGI MARA

**Facial Recognition in the Heterogeneous
Range of Angle Using Speeded-Up
Robust Features (SURF)**

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**Thesis submitted in fulfilment of the requirements
for Bachelor of Computer Science (Hons.) Faculty
of Computer and Mathematical Sciences**

January 2017

ACKNOWLEDGEMENT

Bismillahirrahmanirrahim,

Alhamdulillah praises and thanks to Allah because of His Almighty and utmost blessings, I was able to finish this research within the time duration given. Thank you for lend me health, strengths, ideas and passion to completing this research.

Firstly, my special thanks goes to my supervisor Dr Rajeswari Raju who give me all of guideline, motivation and knowledge sharing, without her this research might not able finish smoothly. Not to be forgotten, special thanks for Dr Hamidah Jantan my final year project lecturer for her extensive guideline, comments and motivation for this research.

Secondly, my special appreciation goes to my family especially my parents. My father Romely Omar and my mother Wan Kuntum Wan Abdullah, both of them never stopped giving encouragement to me and believed on my capabilities to finish this research. And to my siblings Mohammad Izzathilmi Romely, Mohammad Faiz Aiman Romely, Nur Amira Ilyani Romely and Nur Nadiah Nadhirah Romely, all of them were never forgotten to give me support mentally.

Lastly, I would like to thanks my friends who lend me their time, listen to my problem and giving me advice. Thank you to all who involve with this research. - may Allah SWT bless you all. I would never stop learning and improvise myself.

Alhamdulillah

ABSTRACT

Biometric system is a technique to identify a person by using their own body characteristics. It acts as identification and access control in computer science. There are two types of biometric identifiers, which are physiological identifier and behavioural identifier. This research identifier is based on physiological characteristic that are related to the shape of the body and is one of biometric system that has higher success as an identifier that is facial recognition. Over the decades, facial recognition has been broadly explored, but there is still room for improvement since the focus of the earlier approach is more on frontal facial images and non-frontal facial images are extensively unexplored. Non-frontal facial images have more hidden information compared to frontal facial images. Although the current facial recognitions approach have great performance to recognize faces, but current system are usually affected by several interruptions such as uneven illumination, expression and pose-variations. To solve the problem of pose variant, Speeded-Up Robust Features (SURF) has been chosen. SURF is one of techniques used to reduce the time computation which is good for a system to have a good computation performance. This research aims to develop a prototype that able to recognize faces in the heterogeneous range of angle using SURF. The accuracy of this prototype is about 70.00 %. For future work, enhance SURF algorithm maybe by combining SURF with other techniques to have a better recognition result.

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