Universiti Teknologi MARA

Mouth Morphing Using Affine Transformation

Mohd Asnawi Bin Fadzial

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

May 2010

ACKNOWLEDGEMENT

By the name of Allah, the Most Gracious and Most Merciful

First and foremost I would like to thank to Allah the Greatest and The Almighty for giving me the inspiration, motivation, guidance and for being the driving force in everything that I do to complete this thesis.

I would like to express my deepest gratitude to my supervisor, Fakhrul Hazman Yusoff who accepted me to be supervised in the process of completing this project. His guidance and advice has led me to the rightful path in doing this thesis and his confidence in me goes beyond words.

Special thanks to PM Zaidah Ibrahim for his support at all the times, helping and giving brilliant ideas in solving my problems all the way to the completion of my project.

I also would like to take this opportunity to express my sincere appreciation towards my lecture, Dr. Nasiroh Omar who has also steered me in the right direction and path with constructive criticism which not only give me the confidence but also thought me meaningful life lesson in completing this project.

Lastly, I would like to thank to family for their endless patience, love and support and also thank to all my course mates, friends and lecturers for their help, support and guidance, and their valuable comments throughout the length of this study.

ABSTRACT

Morphing is an image processing technique used for the metamorphosis from one image to another. Morphing is used in entertainment industry such as in movies, TV commercials and music videos. Morphing is also used in the gaming industry to add engaging animation to video games and computer games. Morphing is a powerful tool that can enhance many multimedia projects such as presentations, education, electronic book illustrations, and computer-based training. Morphing can be done by getting a sequence of intermediate images which when put together with the original images would represent the change from one image to the other. For this project, affine transformation technique was used to morph images. The implementation of the project shows that the affine transformation technique can morph mouth images.

TABLE OF CONTENT

CONTENT		PAGE
APPROVAL SHEET		ii
DECLARATION		iii
ACKNOWLEDGEMENT		iv
ABSTRACT		v
CHAPTER 1: INTRODUCTION		
1.0	Introduction	1
1.1	Research Background	3
1.2	Problem Statement	5
1.3	Objective	6
1.4	Project Scope	6
1.5	Project Significance	7
1.6	Conclusion	8
CHAPTER 2: LITERATURE REVIEW		
2.0	Introduction	9
2.1	Image Processing	9
2.2	Morphing	10
	2.2.1 Interpolation	12
2.3	Affine Transformation	13
2.4	Least Square Method	15

CHAPTER 3: METHODOLOGY

3.0	**Introduction**	**16**
3.1	**Initiation**	**17**
	3.1.1 Primary Data	**17**
	3.1.2 Secondary Data	**18**
	3.1.3 Hardware Requirement	**18**
	3.1.4 Software Requirement	**19**
3.2	**Image Information**	**20**
3.3	**Read and Write Image**	**21**
3.4	**Image Divide**	**23**
3.5	**Affine Transformation**	**27**

CHAPTER 4: RESULT AND ANALYSIS

4.0	**Introduction**	**29**
4.1	**Analysis to Obtain Coefficients**	**30**
4.2	**Analysis on the Image 1**	**31**
4.3	**Analysis on the Image 2**	**32**
4.4	**Analysis on the Image 3**	**33**
4.5	**Analysis on the Image 4**	**34**
4.6	**Analysis on the Image 5**	**35**

CHAPTER 5: CONCLUSION

5.0	**Conclusion**	**36**
5.1	**Future Improvements**	**36**

REFERENCES **37**