Acknowledgements

Firstly I wish to thank my supervisor Asst. Prof. Dr. Bunyarit Uyyanonvara for his invaluable advice and support throughout the year. I would also like to thank friends in IVC Lab for their advice on using MATLAB[®], helpful suggestions and also for proof reading this thesis. Finally I would like to thank Kingston University, UK and Thammasat university hospital, Thailand who supplied all the images used in this paper.