

Acknowledgements

I would like to thank all the people who have helped me in this endeavor. First, I would like to thank my advisor and committee chairman, Dr. Mehdi Ahmadian, for all his advice and support throughout my time here at Virginia Tech. There is no doubt in my mind that without your help I would not have made it this far. I would also like to thank my other committee members Dr. Inman and Dr. Robertshaw for all their help and support. Special thanks goes to Dr. Inman for giving me the opportunity to work on the Raytheon Project. I would also like to thank Thomas Hegewald for all his help and patience while working with me on the Raytheon Project. It was an honor working and studying under each of you.

The financial support provided by Raytheon Corporation under the direction of Dr. Richard Elley is greatly acknowledged. Further, I appreciate the financial support provided by the Advanced Vehicle Dynamics Laboratory (AVDL), Center for Intelligent Materials Systems and Structures (CIMSS), and Department of Mechanical Engineering at Virginia Polytechnic Institute and State University.

Thanks to each of my friends for all their support while I undertook this project. There are too many to name and for fear of leaving one out accidentally, I will not try. I just want you all to know that I cherish our friendships.

I would especially like to thank my family for their love and support all those years. Mom, thank you for always listening to me and helping me decide what's best. Amy, thank you for being a great sister and a good friend. Dad, thank you for always believing in me.

Thanks to all of you. I couldn't have done it without you.