

## CHAPTER 9

### ACKNOWLEDGMENTS

This research work was funded by the Marie-Curie Actions - Early Stage Training, in the framework program 6 with the CompuSurge project. I wish to express my gratitude to both, Dr. Robert Boesecke and Prof. Dr. Dr. Rüdiger Marmulla for obtaining these funds and giving me the opportunity to carry out this research, as well as for their support and valuable advice throughout these three and a half years in Heidelberg. To Dr. Robert Boesecke, I am twice thankful for the job he generously offered while I was still writing this thesis.

I am also particularly grateful to my supervisor Priv. Doz. Dr. Dr. Georg Eggert for his major and essential contributions, helpfulness, productive critiques of this work and continuous motivation. Even though already heavily burdened at the clinic and further research work, I am extremely thankful for taking this study further and to conclusion.

Special thanks go to my colleagues in Heidelberg who I could always count on when needed: MEngSc Gavin J. Kane who taught me so much more than I expected to learn these past years, not only in the technical area but as well the human one. His patience on the icy slopes is mostly appreciated. Of course his humorous motivation, support, and Australian English knowledge proved to be as well priceless when proof-reading this and other works. Dr. Rastislav Slávik who not only gave me a surgical insight that proved valuable to this study, he also always had an uplifting hand ready. This hand was especially appreciated when almost crashing against trees in Val Cenis. Dr. Horia Ionescu with whom I hardly had time to discuss anything but my thesis work; I'm afraid we came to know each other when the party was over, however I am very thankful for his help on conducting experiments.

For his essential contribution and help on the patent issue with KUKA Roboter GmbH I am deeply thankful to Dr. Tobias Ortmaier.

To our secretary in the department, Mrs. Von Sydow I am deeply thankful for solving all the bureaucratic issues this project incurred as if she had a magic wand that would make them all go away. I am thankful to Mr. Andreas Rutt who made the cast models and supplied technical advice, as well, to the Heidelberg Mechanical Workshop lead by Mr. Wolf and Electrical Workshops lead by Mr. A. Hoffmann who without their help this work would have not been completed.

Acknowledgements are also due to Prof. Dr. Dr. Joachim Mühlhölzer who kindly supplied the space at the department for conducting this research. May you rest in peace.

For their rich and abundant collaboration, I am thankful to my co-workers at the IPR Karlsruhe. I am particularly grateful to both Dr. Helge Ludger Peters and Dipl.-Inf. Jessica Burgner for laying fundamental groundwork where this study flourished. Their discussion and motivation was a corner stone where this work stands.

For an essential helping hand in managing the LBR3 and further advice I am deeply thankful to Holger Mönnich. Dipl. -Inf. Christoph Schönfelder for his help with the FaroArm, as well as Ing. Federico Medini for his involvement. M. Eng. Alessandro De Mauro and Dipl. Phys. Matteo Ciucci are also acknowledged not only for their motivation, productive discussion and empowerment, but for their friendship and availability for

almost anything. All other colleagues who frequently helped me with advice, fruitful discussion and orientation: Dr. Lüder Kahrs, Dipl. - Inform. Med. Markus Mehrwald and Dipl. - Phys. Daniel Stein.

Last but not least, Dr. rer. nat. Jörg Raszkowski for almost everything but essentially patience and advice right from the beginning of the project.

To all the sources of information that help me by offering their images, tables and knowledge to compile this work, I am also thankful.

On the course of life I've meet several individuals who inspired me, motivated me to go further, awakened my interest in research and pointed me a way. In fact, I have been blessed with lots of friends who I cherish for life. Childhood friends for more than 20 years who saw me become the person I am today, to more recent friends of the last couple of years. They too deserve a word or two for they are the persons who supported me all these years, who held my hand in times of need, and given me a led up one way or another. I am thankful to my childhood friends from Madeira who believed in me ever since I was a boy, and just keep cheering and supporting me, even when I am so far way. As well, to the many friends I made in Porto while studying and always hold dear. But of course it were the friends in Heidelberg who supported me the most during this period of my life. Some have left the city before this chapter of my life was finished, some stayed a little longer. They are now scattered around this spinning little globe, but nonetheless they made my life here more than interesting but also worthwhile. Among these I must mention the ones who had a direct impact on this thesis by proof-reading it, Dr. Christian Byrnes, Dr. Iain Brown, Miss Isabel Sofia Lacerda Pereira and Miss Julliet Hofmann BA. I do not write more names of all the persons I mean to thank, otherwise the length of this section would rival with the rest of the thesis. Even so, all those involved with me know who has due acknowledgement for their support. Thank you to those who saw what I could be before I was.

I cannot finish without saying how grateful I am with my family. A most heartfelt thank you goes to my Mom and Dad for more than I can write, but mainly for their continuous empowerment and motivation in all of my life decisions. To my loving sister, aunts, uncles, cousins and remaining family, thank you for your inspiration, talent, support, motivation and simply for being there when I needed.

Thank you Carolin Lucht, for really everything... Especially for your love and care.

Quotes that now make more sense:

*“There is no substitute for hard work”*  
Thomas Edison (1847 - 1931)

*„Wusste nie, wofür die Ewigkeit gut sei. Sie gibt uns die Chance um Deutsch zu lernen“*  
Mark Twain (1835 - 1910)

*“Quando se quer alguma coisa, o universo inteiro conspira a favor”*  
Paulo Coelho (1947 - )

*“Where there's a will, there's a way”*  
Proverb