Preface

The road culminating in this thesis was neither straight nor flat. It greatly influenced my professional and personal life, and has shaped me into the research street fighter I am today. It all started when I was graduating from Montessori primary school in Nijmegen. At that point I was diagnosed as a below-average student and given the advice to follow the easiest educational track available in the Netherlands, 'individueel beroepsonderwijs' (vocational training). What my teachers however failed to recognize was that I had a strong form of dyslexia. Fortunately my parents were convinced that I could do much better and had me tested at the University of Nijmegen. The results showed that I should be able to perform at the schooling level of 'Voorbereidend Wetenschappelijk Onderzoek (VWO)' needed for university entry.

Secondary school at the Canisius College Mater Dei gave me the opportunity to start my academic education. I showed a knack for the exact sciences, as may be expected with a loving father who teaches physics and maths. Although linguistics was still very hard for me, the remedial teaching by Rini Leunissen as well as many painstaking hours of study saw me improving step by step.

My education was interrupted in 1994 due to declining health. My asthma had reached a critical level that could not be cured in the Netherlands. Fortunately I was given the opportunity to stay at the Dutch Asthma Centre Davos (in Switzerland for three months). This place provided the clean air needed for my recuperation, as well as instruction in how to accept and live with my asthma, and the chance to explore ones limits. While I had all the help, physically and mentally, one could wish for, they were not accredited to teach at VWO level. Therefore, my teachers at home faxed instructions and examinations to me every week. Although distractions were plenty (like learning to ski), numerous telephone calls with my father reduced the set-backs so that I could still finish the year and subsequently secondary school successfully.

After completing secondary school I struggled to find a study that suited me, as my interests were (and are) (too) many. Finally I decided to pursue the study of applied physics at the technical University of Twente (UT), mainly because physics forms the universal building blocks for everything, and I am interested in everything). Although I started off badly, passing few exams, I finally found my feet after about half a year. During the study I rediscovered my interest in space science which brought me to the Physics of Fluids department of Detlef Lohse. Here Gerrit de Bruin arranged an

internship at the Von Karman Institute, Belgium. The work I did for the Arianne 5 Space program confirmed that performing research in space science was the career I wanted. However, what I had in mind was not possible at the time at the Physics of Fluids group, where I finished my thesis on the dynamics of micro bubbles under the influence of ultrasound forcing.

Still full of ambition to pursue a career in space science I was fortunate to have Bob Su, my promoter at the ITC, provide me with the chance to prove myself in the NWO-SRON project on remote sensing and radiative transfer. Although it was hard for me at the start, due to the differences between remote sensing research and physics of fluids research (remote sensing dealing with more real-life problems), Ambro Gieske, my first supervisor, and later on Wout Verhoef, guided me through this period. In the summer of 2007, through another unwanted twist of events, I ended up in hospital with acute anaphylactic shock. The realisation of the immediate threat I had faced hit me later with the sudden death of my good friend, Dan Omolo, due to heart failure. Fighting these unwanted and unexpected twists of fate has finally led to the creation of this dissertation.

All of the setbacks showed me that not only should we fight for the things we want, but we should also enjoy the path they take us, even though this might involve some unexpected turns.