

Acknowledgements

Many, many people have taught and supported me over the years. I would especially like to thank ...

... Professor Allen Peterson, whom we all miss. He found me a home in the STARLab and encouraged this research from its inception.

... Professor Jim Angell, my principal adviser and first reader, without whose optimism, patience, and broad curiosity I could not have finished this dissertation. He was my second adviser when Pete passed away, and he willingly accepted a promotion. He has been a faithful friend throughout. Truly his generosity knows no bounds.

... Professor Len Tyler, my second reader, who took me under his wing after Pete passed away. It has been a pleasure to work closely with him this past year. His praise is always a sweet surprise, and this dissertation is immeasurably better for his efforts.

... Professor Tony Fraser-Smith, my third reader. He hooded me when I walked through graduation early while my grandmother could still travel, and he agreed to be my third reader when I needed one. I am honored that he has always treated me as a friend and colleague.

... Dr. Ivan Linscott, who opened his weekly group meetings to me when I sought companionship, provided a venue for practicing my Orals, and served at my exam when Len could not.

... Professor Tom Lee, my Orals chairman, for his service and for such good questions.

... Dr. David Stork, for giving me a great deal of his time over a span of many months, and for insisting I try simplifying methods in which I did not believe initially but which proved too powerful to ignore.

... Professor Herbert Solomon, who recently passed away, for sharing his expertise in geometrical probability.

... Bill DeVanney at IDT for allowing me access to their industrial data, Sylvia Kwan for introducing me to Bill, and John MacPherson at IDT for many hours spent teaching me their software and making sure I got what I needed.

... the folks at Digital: Al Miller for providing the expertise required to get started, Reesa Abrams for mentoring me and for finding me financial support for three years, and Venkat Kalkunte for management support in the project's first year.

... Jeff Hutchins, then at Hewlett Packard, for hiring me into an engineering team associated with an IC fab and giving me the opportunity to learn a great deal about the real world of IC testing.

... Ariel Flat from HP/Agilent, for many fun arguments, for his circle-fitting algorithm, for excellent comments on Section 2.1, and for his joy and friendship.

... my many other co-workers and friends from HP/Agilent, especially Peter Brooks and Dorothy Kielty.

... the past and present staff throughout the department, especially Diane Shankle, Helen Niu, Shaolan Min, Joice DeBolt, Ann Guerra, Sieglinde Barsch, and Olivia Peterson.

... the Fannie and John Hertz Foundation, for the honor of being selected for a fellowship, for five years of financial support, and for hosting elegant gatherings attended by very interesting people.

... all the folks who kept my computers working over the years, especially Charlie Orgish at CIS, Mike Maurer and Edgar Holmann when STARLab was in the Durand Building, and most recently Vjeko Svilan and Jawad Nasrullah at Packard.

... the support network for women graduates students, especially ee-women, the Graduate Women's Network, and the Engineering Women's Support Group.

... my music friends, for making such a positive impact on my sanity: Professors William Ramsey and Stephen Sano for wonderful choral music at Stanford; Don Haneke for five years of wonderful music-making in the D. H. Chorale; the Stanford Savoyards for pleasant times performing Gilbert and Sullivan; and Bill & Anna Trabucco and Faith

Bell, with whom I love to sing madrigals.

...other women graduate students who encouraged and befriended me, especially Brooke Hemming, Miriam Blatt, Karen Pieper, Elisabeth Browne, Sun Hur-Diaz, Dorothy Mighell, Lorelei Muniz, Sylvia Kwan, and Susan Lord.

...all the other students who became a part of my experiences at Stanford, especially the gang from the Zoo—Steve Piche, Eric Wan, and Mary Helen Stevenson—and the folks in the Ultra Low Power group—Jim Burr, Bevan Baas, Vjeko Svilan, and Jawad Nasrullah.

...Dr. Kevin Knuth at NASA Ames Research Center, for my first published paper as first author, for my first trip to Europe, and for showing me there's life after graduate school.

...and, without a doubt, my family in California, Michigan and Indiana—my Bada, my Mom, Lauren, Alan, Rachel, Dylan, and Duane—for years of patient support and for celebrations after each milestone.