Preface

When in danger of turning this preface into an essay about why it is important to know the history of optimization, I remembered my favorite Antoine de Saint-Exupery quote: “If you want to build a ship, don’t drum up the men to gather wood, divide the work and give orders. Instead, teach them to yearn for the vast and endless sea.” Optimization history is not just important; it is simply fascinating, thrilling, funny, and full of surprises. This book makes an attempt to get this view of history across by asking questions such as:

- Did Newton create the Newton method?
- Has Gauss imported Gauss elimination from China?
- Who invented interior point methods?
- Was the Kuhn-Tucker theorem of 1951 already proved in 1939?
- Did the Hungarian algorithm originate in Budapest, Princeton or Berlin?
- Who built the first program-controlled computing machine in the world?
- Was the term NP-complete created by a vote initiated by Don Knuth?
- Did the Cold War have an influence on the maximum principle?
- Was the discovery of the max-flow min-cut theorem a result of the Second World War?
- Did Voronoi invent Voronoi diagrams?
- Were regular matroids characterized by a code breaking chemist?
- Did an archaeologist invent the Hamming distance and the TSP?
- What has the Kepler conjecture to do with “mathematical philosophy”?
- Have you ever heard of an Italian named Wilfried Fritz, born in France and deceased in Switzerland?
- What does the electrification of South-Moravia have to do with spanning trees?
- Did Euler cheat Russia and Prussia concerning stolen horses?
- And why did Omar Khayyam compute the third convergent of a continued fraction?

Interested? How many of these questions can you answer? Some of them touch fundamental issues of optimization, others appear anecdotal or even somewhat obscure, but there may be more behind them than you think. The forty-one articles in this book and my introductions to the sections provide some full and some partial answers. Just glance through the book, and I hope you will get stuck and start reading.

Why is the book not entitled *Optimization History*? Well, this would have put in a serious claim that I did not want to meet. This book is not intended to compete with scholarly historical research. A few articles, though, get close to that. No article is fiction; all are based on solid historical information. But I have asked the authors to present also their particular views, and if something is historically not clear, to present their own opinions. Most of all, I requested to write in an entertaining way addressing the casual reader.

The articles in this book are not meant for the rare quiet moments in a study. You can read them on a train or plane ride; and I do hope that you get excited about some of the topics presented and start investigating their history by digging deeper into the subject. The references in the articles show you how to do that.

Berlin, August 2012 Martin Grötschel