统计学院学术报告

时间：4 月 18 号 (星期三) 下午 13:30-14:30

地点：华东师范大学闵行校区统计楼 105 室

报告人：Norm Matloff 教授 (University of California, Davis)

报告题目：Polyreg: an R Package Serving As an Alternative to Neural Networks

摘要:

We argue that, for theoretical reasons, neural networks can in a sense be considered a form of polynomial regression. It thus makes sense to investigate how well explicit polynomial models perform relative to neural networks (NNs). Our polyreg package facilitates the development of multivariate polynomial models, and we have been using it to compare to neural networks. In our experiments so far, polyreg has performed as well as, sometimes better than, neural networks, without the disadvantages of NNs (many tuning parameters, convergence issues, "black box" problem).

报告人简介:

Dr. Norm Matloff is a professor of computer science at the University of California, Davis, and was formerly a professor of statistics there. He was born (1948) and raised in the Los Angeles area, and has a PhD in pure mathematics from UCLA, specializing in probability/functional analysis and statistics. He has been the recipient of the university's Distinguished Teaching Award and Outstanding Faculty Adviser Award.

Dr. Norm Matloff has written several open-source textbooks, notably one on probability and statistics and one on parallel programming. He is also a well-known expert in data science. His book on the R programming language, The Art of R Programming, published in 2011, is considered one of the leading works of its kind, and he is on the editorial boards of the Journal of Statistical Software and the R Journal. He has recently presented invited papers in data science at Interface 2012: the Future of Statistical Computing, useR! 2012, JSM 2013, useR! 2017 and SAE 2017.

Dr. Norm Matloff's current interests are machine learning, parallel computation, recommender systems and small area estimation. His last book project is Parallel Computation for Data Science(Chapman and Hall/CRC, 2015). His most recent book is Statistical Regression and Classification: from Linear Models to Machine Learning (Chapman and Hall/CRC, 2017). He is the author of two recent R packages, polyreg and rectools (for recommender systems).

Figure 1: Norm Matloff

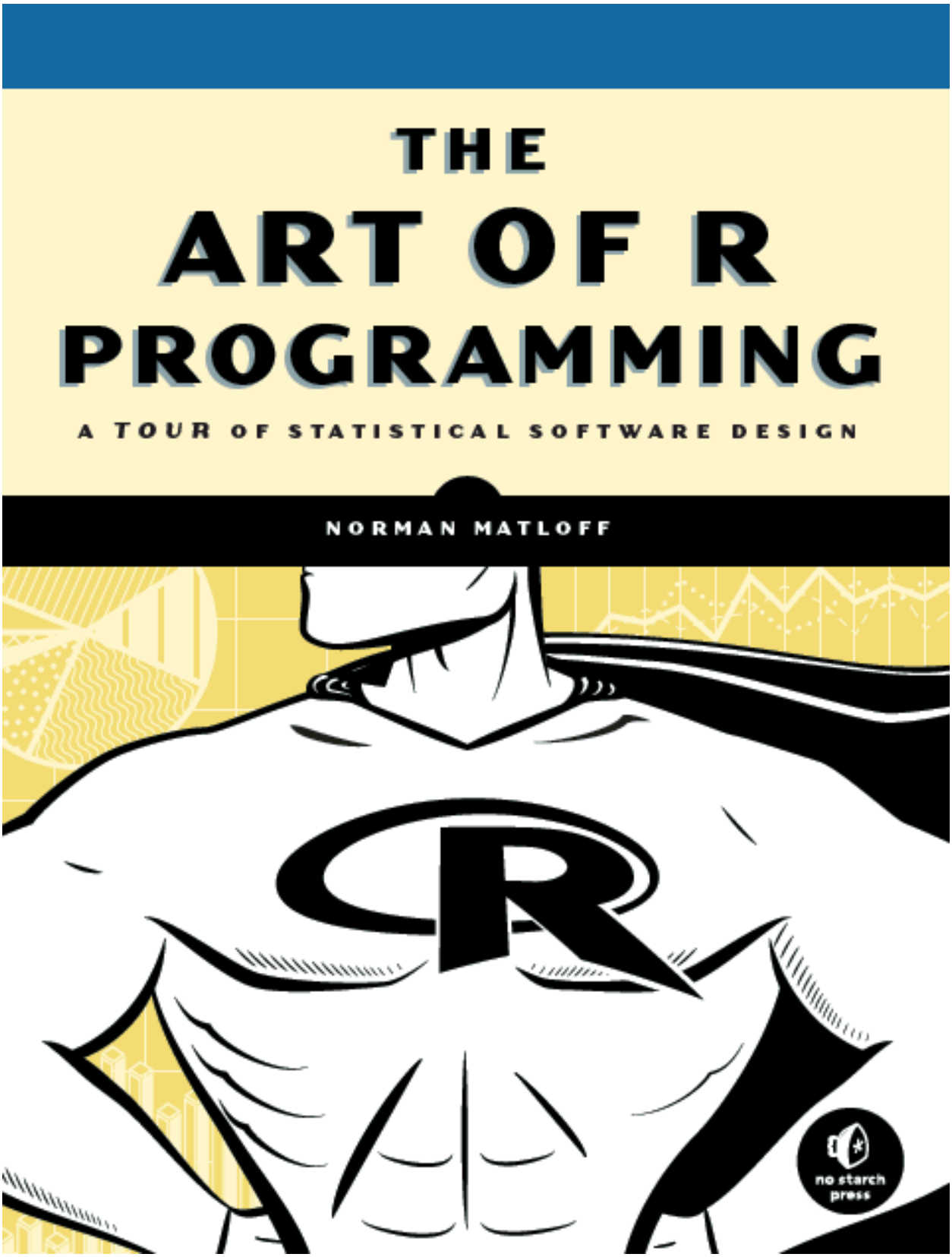

Figure 2: The Art of R Programming

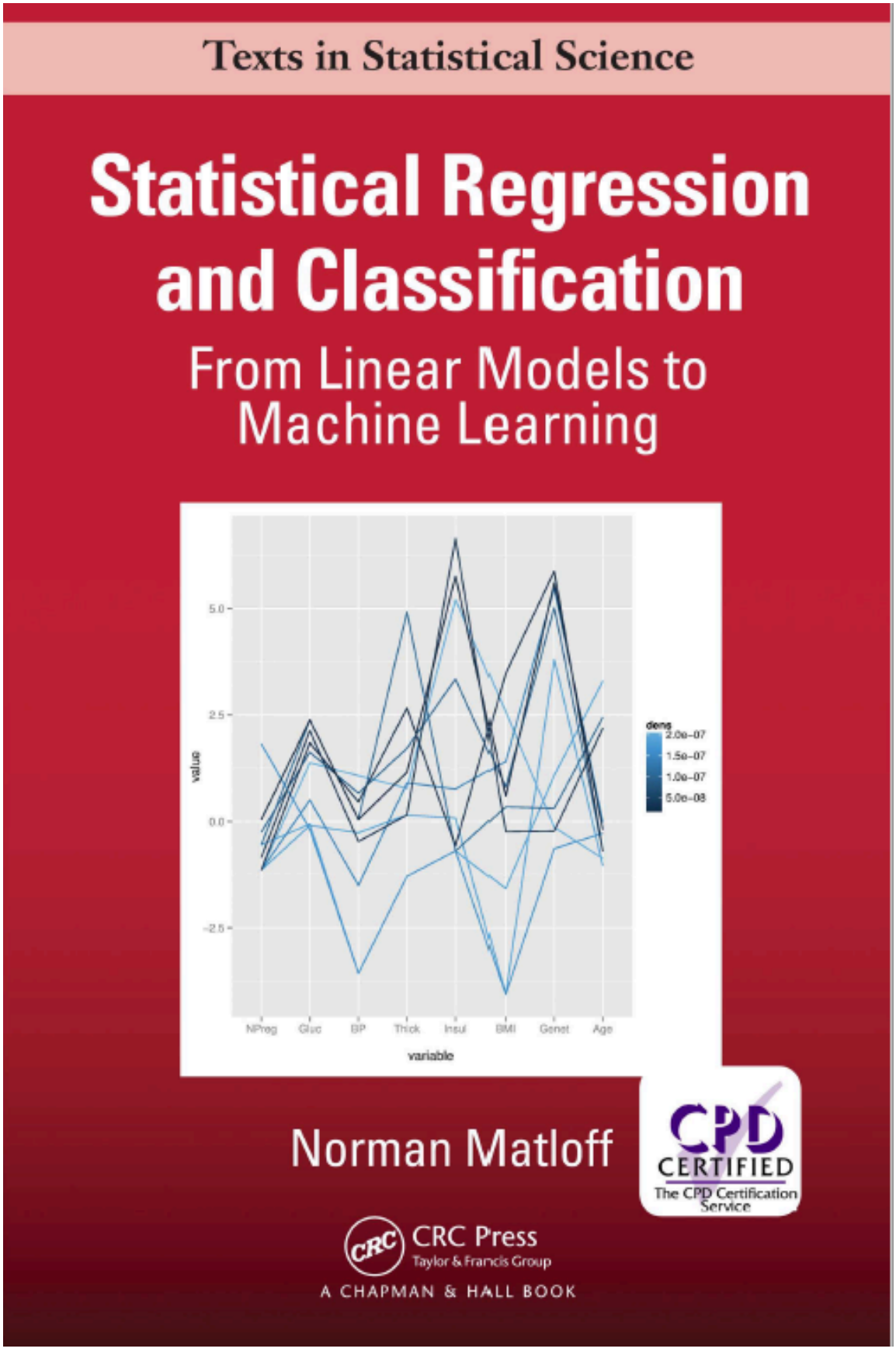

Figure 3: Statistical Regression and Classification: From Linear Models to Machine Learning

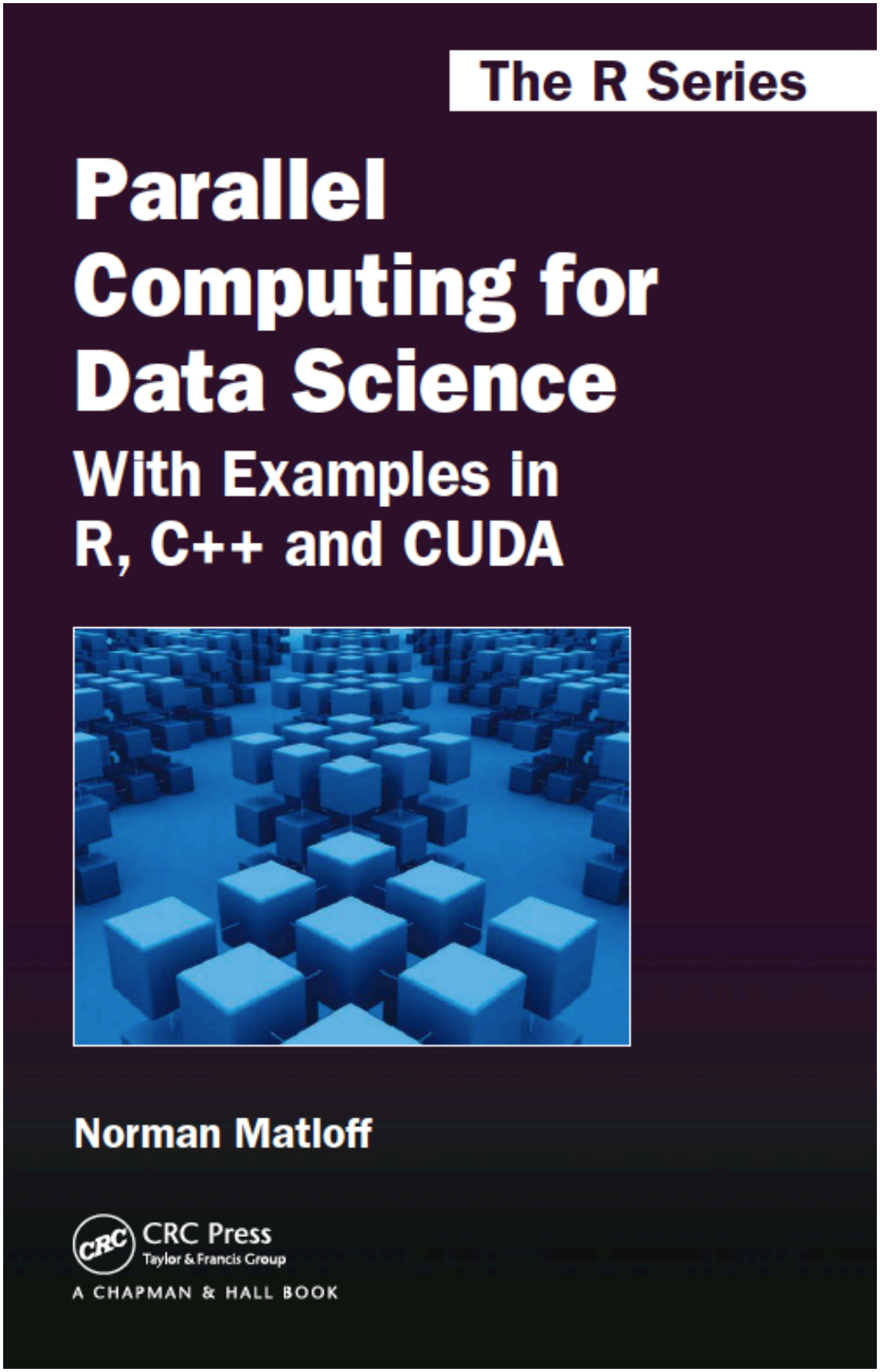

Figure 4: Parallel Computing for Data Science: With Examples in R, C++ and CUDA

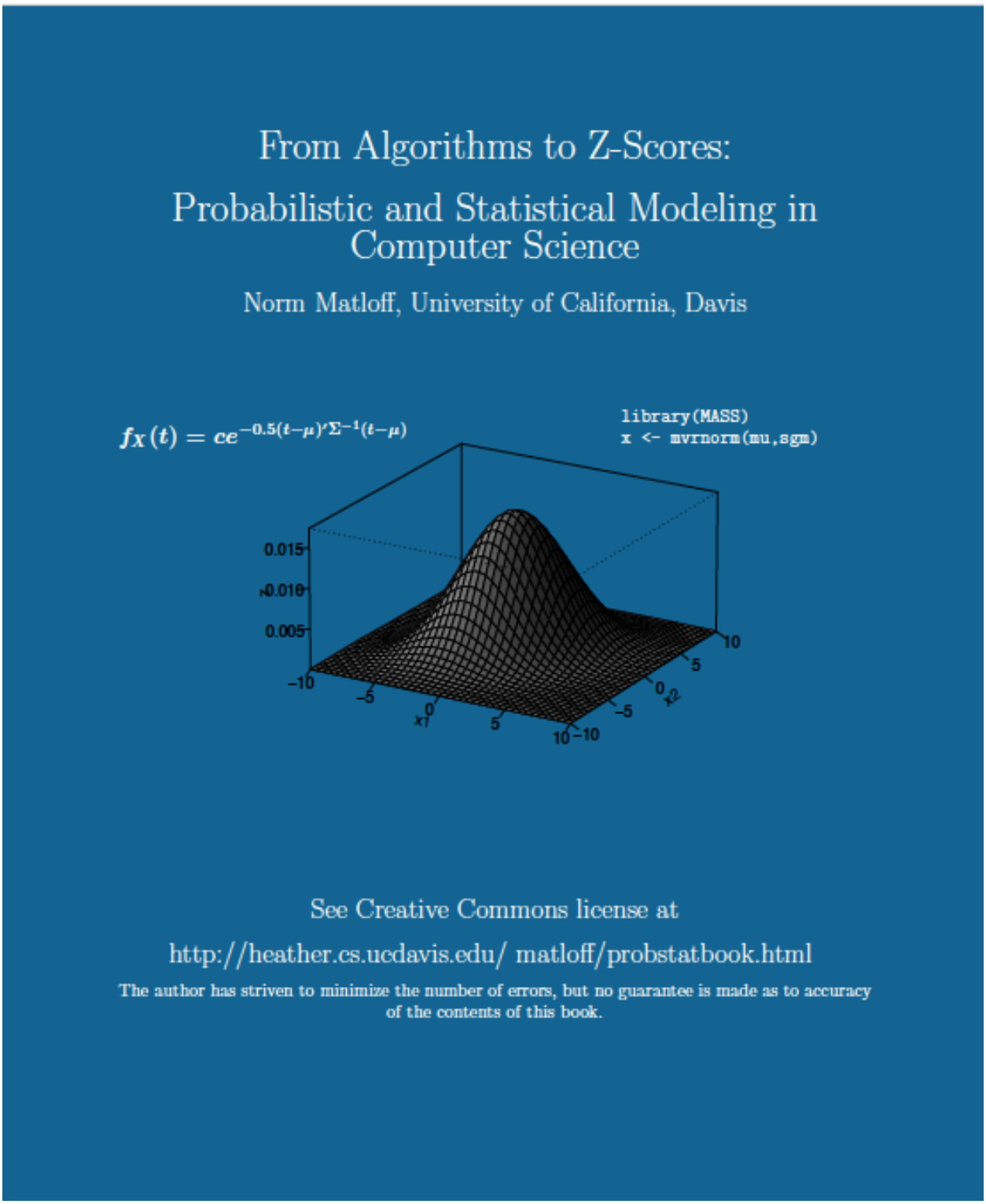

Figure 5: From Algorithms to Z-Scores: Probabilistic and Statistical Modelling in Computer Science

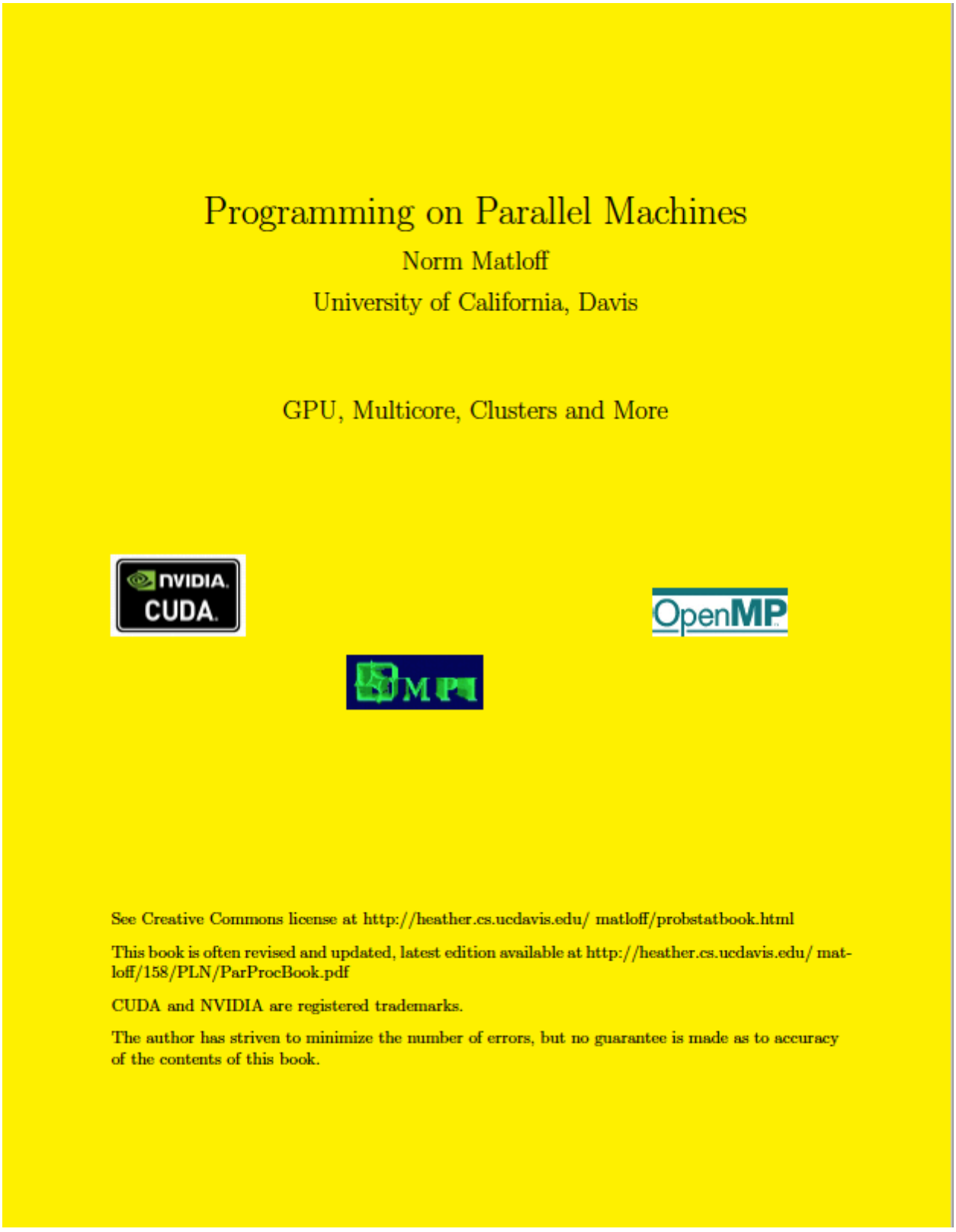

Figure 6: Programming on Parallel Machines