A Workout in Computational Finance (The Wiley Finance Series)

Andreas Binder, Michael Aichinger
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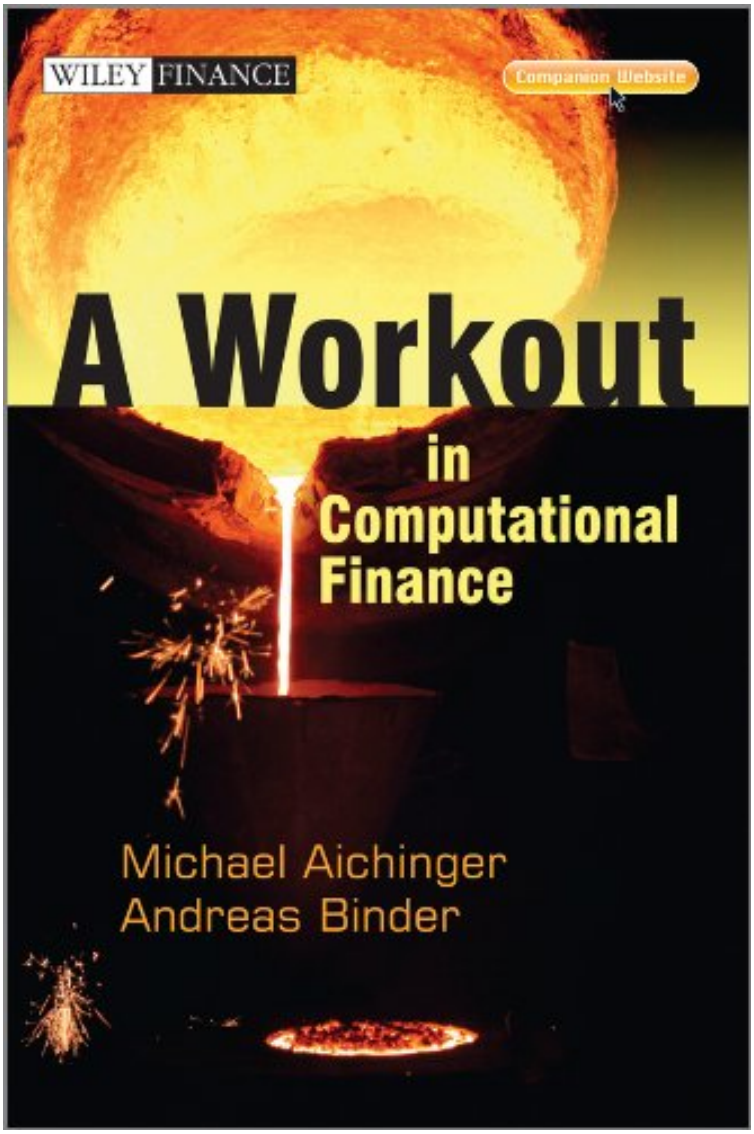

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Andreas Binder, Michael Aichinger : A Workout in Computational Finance (The Wiley Finance Series) before purchasing it in order to gage whether or not it would be worth my time, and all praised A Workout in Computational Finance (The Wiley Finance Series):

3 of 3 people found the following review helpful. Refreshingly goodBy M.A. van den Berg (sitmo)I think it's one of the best quantitative finance book I have seen in the last couple of years (and I have many!). It's for people who are building quant models. The book explains all the models andthe numerical techniques you will need to know to implement them. It has a perfect balance between being very informative and discussing practical numerical aspects. It giving the basic mathematical context without ever losing focus of staying relevant. Overall it's very pragmatic and

very rich on information. I compare it to "Implementing Derivative Models" (which was great at the time) and the PWOQF series.0 of 14 people found the following review helpful. Way out thereBy Nicholas L. BuckeridgeIf you don't already have a PhD in obscure mathematics, don't start with this. As a hobbyist in "financial engineering", this is out there.

A comprehensive introduction to various numerical methods used in computational finance today Quantitative skills are a prerequisite for anyone working in finance or beginning a career in the field, as well as risk managers. A thorough grounding in numerical methods is necessary, as is the ability to assess their quality, advantages, and limitations. This book offers a thorough introduction to each method, revealing the numerical traps that practitioners frequently fall into. Each method is referenced with practical, real-world examples in the areas of valuation, risk analysis, and calibration of specific financial instruments and models. It features a strong emphasis on robust schemes for the numerical treatment of problems within computational finance. Methods covered include PDE/PIDE using finite differences or finite elements, fast and stable solvers for sparse grid systems, stabilization and regularization techniques for inverse problems resulting from the calibration of financial models to market data, Monte Carlo and Quasi Monte Carlo techniques for simulating high dimensional systems, and local and global optimization tools to solve the minimization problem.

ldquo;Mathematical Finance needs both: a well-founded theory based on stochastic calculus as well as numerical valuation schemes that work. In A Workout in Computational Finance the authors put emphasis on the numerical aspects and present an impressive range of numerical methods. All these techniques have been implemented by their group and can be used as a starting point for building a professional software system.rdquo; mdash;Walter Schachermayer, Full Professor for Mathematical Finance, University of Vienna ldquo;With their strong background in numerical simulation of industrial problems, the authors succeed to develop the concepts of different numerical schemes which are useful for computational finance and essential for valuation, risk analysis and the risk management of financial instruments. Especially in times of difficult market environments, the mathematical and algorithmic foundation of software used in banking must be a solid one which avoids additional traps of poor implementation. A Workout in Computational Finance gives clear recommendations for the preferred numerical methods for various models and instruments. The book will be utmost useful for practitioners but it also will be of great interest for researchers in the field.rdquo; mdash;Gerhard Larcher, Institute of Mathematical Finance, Kepler Universitauml;t ldquo;The authors cover a broad range of numerical techniques for differential equations in computational finance, such as finite elements, trees, Monte Carlo, Fourier techniques and parameter calibration. Using sound, yet compact mathematical reasoning, they capture the substance of models for interest rate and equity derivatives, and provide hands-on guidance to numerics, covering all sorts of practical challenges. A vast number of numerical results illustrate potential implementation pitfalls and the mitigation techniques presented. With its strong focus on tangible usability this book is a highly valuable manual for students as well as professionals.rdquo; mdash;Robert Maringer, Head Valuation Control Switzerland, Credit Suisse ldquo;For shaping your body you should go to a gym, while for building up your numerical toolkit you need a workout in computational finance. This modern treatment of numerical methods in quantitative finance addresses problems that professionals working in the field face on a daily basis. The very clear presentation of the material also makes it a perfect fit for students having a background in the theory of mathematical finance who want to gain insight on how practical problems are tackled in the industry.rdquo; mdash;Philipp Mayer, Financial Modeling, ING Financial Markets, BrusselsFrom the Back CoverQuantitative skills are a prerequisite for anyone looking to work in the finance industry today. Within the industry, any risk professional who wants to collaborate with, or work in most front office departments needs a thorough grounding in numerical methods, and the ability to assess their quality, their advantages and their limitations. A Workout in Computational Finance delivers a profound and hands-on account of numerical methods used in modern quantitative finance, covering valuation and risk analysis of financial instruments from vanilla bonds to complex structures. The presented algorithms include, amongst others, tree methods, finite differences and finite elements, efficient Monte Carlo methods and Fourier techniques. Local and global optimisation techniques as well as stabilising regularisation methods for model calibration are thoroughly analysed. The authors originate from the fields of theoretical physics and industrial mathematics, respectively, and have spent their professional careers creating efficient software solutions for producing industries and for financial industries. This book develops algorithms from the ground up, thus giving the reader a sound overview of their relative strengths and weaknesses. It is aimed at practitioners in the financial industry, for whom this is key knowledge in order to achieve optimal results with available data. It also enables junior quants with an IT background to implement numerical algorithms that work right away. A Workout in Computational Finance is accompanied by a range of worked-out examples available from www.unrisk.com/Workout.About the AuthorMICHAEL AICHINGER obtained his Ph.D. in Theoretical Physics from the Johannes Kepler University Linz with a thesis on numerical methods in density functional theory and their application to 2D finite electron systems. A mobility grant led him to the Texas AM University (2003) and to the Helsinki University of Technology (2004). In

2007 Michael Aichinger joined the Industrial Mathematics Competence Center where he has been working as a senior researcher and consultant in the field of quantitative finance for the last five years. He also works for the Austrian Academy of Sciences at the Radon Institute for Computational and Applied Mathematics where he is involved in several industrial mathematics and computational physics projects. Michael has (co-) authored around 20 journal articles in the fields of computational physics and quantitative finance. ANDREAS BINDER obtained his Ph.D. in Industrial Mathematics from the Johannes Kepler University Linz with a thesis on continuous casting of steel. A research grant led him to the Oxford Center for Industrial and Applied Mathematics, UK, in 1991, where he got in touch with mathematical finance for the first time. After some years being an assistant professor at the Industrial Mathematics Institute, in 1996, he left university and became managing director of MathConsult GmbH, where he heads also the Computational Finance Group. Andreas has authored two introductory books on mathematical finance and 25 journal articles in the fields of industrial mathematics and of mathematical finance.