
Preface

Recent years have seen the widespread application of Natural Computing algorithms (broadly defined in this context as computer algorithms whose design draws inspiration from phenomena in the natural world) for the purposes of financial modelling and optimisation. A related stream of work has also seen the application of learning mechanisms drawn from Natural Computing algorithms for the purposes of agent-based modelling in finance and economics. In this book we have collected a series of chapters which illustrate these two faces of Natural Computing. The first part of the book illustrates how algorithms inspired by the natural world can be used as problem solvers to uncover and optimise financial models. The second part of the book examines a number agent-based simulations of financial systems.

This book consists of ten chapters each of which was selected following a rigorous, peer-reviewed, selection process. The chapters illustrate the application of a range of cutting-edge natural computing and agent-based methodologies in computational finance and economics. While describing cutting edge applications, the chapters are written so that they are accessible to a wide audience. Hence, they should be of interest to academics, students and practitioners in the fields of computational finance and economics.

The inspiration for this book was due in part to the success of EvoFIN 2008, the 2nd European Workshop on Evolutionary Computation in Finance and Economics. EvoFIN 2008 took place in conjunction with Evo* 2008 in Naples, Italy (26-28 March 2008). Evo* is an annual collection of European conferences and workshops broadly focused on Evolutionary Computation, and is the largest European event dedicated to this field of research. Some of the chapters presented in this book are extended versions of papers presented at EvoFIN 2008, which have also undergone the same rigorous, peer-reviewed, selection process as the other chapters.

This book follows on from **Natural Computing in Computational Finance** (Volume 100 in Springer's *Studies in Computational Intelligence* series) which in turn arose from the success of EvoFIN 2007, the very first European

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Workshop on Evolutionary Computation in Finance & Economics held in Valencia, Spain in April 2007.

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