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Autonomic Systems

## Computer Science : Computer Systems Organization and Communication Networks

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# Economic Models and Algorithms for Distributed Systems

- Interdisciplinary approach that combines work from Economics and Computer Science
- Coordination and incentive problems prevalent to any kind of distributed system are analyzed by means of economic theory
- Economic theory is put to work by providing evidence (e.g. by prototypes) that the pure concepts are feasible to be implemented in the field
- Theoretical work is illustrated with experiences from state-of-the-art European projects
- Addresses many new insights into how to approach coordination and incentive problems

Distributed computing paradigms for sharing resources such as Clouds, Grids, Peer-to-Peer systems, or voluntary computing are becoming increasingly popular. While there are some success stories such as PlanetLab, OneLab, BOINC, BitTorrent, and SETI@home, a widespread use of these technologies for business applications has not yet been achieved. In a business environment, mechanisms are needed to provide incentives to potential users for participating in such networks. These mechanisms may range from simple non-monetary access rights, monetary payments to specific policies for sharing. Although a few models for a framework have been discussed (in the general area of a "Grid Economy"), none of these models has yet been realised in practice. This book attempts to fill this gap by discussing the reasons for such limited take-up and exploring incentive mechanisms for resource sharing in distributed systems. The purpose of this book is to identify research challenges in successfully using and deploying resource sharing strategies in open-source and commercial distributed systems.

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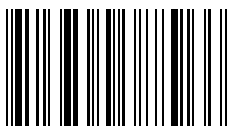
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