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with Constant Capacity -- 4 Conclusion -- References -- Service Chain Placement in SDNs -- 1 Introduction -- 1.1 Related Work -- 1.2 Our Results -- 2 Preliminaries -- 3 Hardness Results -- 4 Algorithms for Physical Directed Acyclic Graphs -- 4.1 Placing a Sub-chain in a Physical Node -- 4.2 Placing a Service Chain -- 4.3 Placing a Service Chain with a Latency Bound -- 4.4 FPTAS for General Costs -- 5 General Networks -- References -- Tight Approximability of the Server Allocation Problem for Real-Time Applications -- 1 Introduction -- 2 Approximation Algorithms -- 2.1 Case 1: Metric in SU -- 2.2 Case 2: Metric in S -- 3 Hardness of Approximation -- 4 Experiments -- 4.1 Acceleration of the Proposed Algorithms -- 4.2 Experiment 1: Following Kawabata et al. KCO16 -- 4.3 Experiment 2: With More Servers -- References -- Computing with Risk and Uncertainty -- Risk Aware Stochastic Placement of Cloud Services: The Case of Two Data Centers -- 1 Introduction -- 2 The Normal Two Bin Case -- 2.1 The Sorting Algorithm -- 2.2 The Correctness Proof -- 3 Other Cost Functions -- 4 Non-normal Distributions -- 4.1 The Berry-Esseen Theorem -- 4.2 Approximating General Independent Distributions with the Normal Distribution.
5 Simulation Results -- 5.1 Results for Synthetic Normally Distributed Data -- 5.2 Results for Real Data -- 6 Conclusions -- A Proving SP-MED Falls into Our Framework -- B Proving SP-MWOP Falls into Our Framework -- C Proving SP-MOP Falls into Our Framework -- D Error Induced by the Reduction to the Normal Distribution -- E Error Induced by Outputting an Integral Solution -- E.1 SP-MED -- E.2 SP-MWOP -- F Unbalancing Bin Capacities Is Always Better -- References -- Towards an Algebraic Cost Model for Graph Operators -- 1 Introduction -- 2 Related Work -- 3 Algebraic Framework -- 3.1 Data Model -- 3.2 Base Operators -- 3.3 Cost Model -- 4 Graph Operator Decomposition -- 4.1 Finding Cycles -- 4.2 Random Walk, Path, and Star-Path -- 4.3 Grid Query -- 5 Experiments -- 5.1 Experimental Setup -- 5.2 Results and Discussion -- 5.3 Including Label Information in the Cost Model -- 6 Conclusions -- A Appendix -- A.1 Random 4-Walk Benchmarks -- References -- Computing Probabilistic Queries in the Presence of Uncertainty via Probabilistic Automata -- 1 Introduction and Motivation -- 2 Related Work -- 3 Definitions and Notation -- 4 Using Probabilistic Automata to Answer Queries -- 4.1 Constructing Automata from Queries -- 4.2 The General Method -- 5 Conclusion and Future Work -- References -- Scaling and Cost Models in the Cloud -- Improving Rule-Based Elasticity Control by Adapting the Sensitivity of the Auto-Scaling Decision Timeframe -- 1 Introduction -- 2 Motivation -- 3 The AdaFrame Library -- 3.1 Adaptive Monitoring Estimation Model -- 3.2 Runtime Change Detection -- 4 Evaluation -- 4.1 Testbed 1: Scaling a NoSQL Document Store -- 4.2 Testbed 2: Scaling the Business Logic of a Web Service -- 5 Related Work -- 6 Conclusion -- References -- Risk Aware Stochastic Placement of Cloud Services: The Multiple Data Center Case -- 1 Introduction.
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Sommario/riassunto

This book constitutes the thoroughly refereed post-conference

proceedings of the Second International Workshop on Algorithmic Aspects of Cloud Computing, ALGOCLOUD 2017, held in Vienna, Austria, in September 2017. The 9 revised full papers were carefully reviewed and selected from 27 submissions. The aim of the workshop is to present research activities and results on topics related to algorithmic, design, and development aspects of modern cloud-based systems.