

1. Record Nr.	UNINA9910592983503321
Titolo	Distributed Applications and Interoperable Systems : 22nd IFIP WG 6.1 International Conference, DAIS 2022, Held as Part of the 17th International Federated Conference on Distributed Computing Techniques, DisCoTec 2022, Lucca, Italy, June 13-17, 2022, Proceedings // edited by David Eyers, Spyros Voulgaris
Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2022
ISBN	9783031160929 3031160924
Edizione	[1st ed. 2022.]
Descrizione fisica	1 online resource (204 pages)
Collana	Lecture Notes in Computer Science, , 1611-3349 ; ; 13272
Disciplina	004.6782 004.36
Soggetti	Software engineering Software Engineering
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Intro -- Foreword -- Preface -- Organization -- Contents -- Blockchains and Cryptocurrencies -- An Evaluation of Blockchain Application Requirements and Their Satisfaction in Hyperledger Fabric -- 1 Introduction -- 2 Related Work -- 3 Background -- 4 Methodology -- 5 Requirements Analysis -- 5.1 Electronic Voting (EVote) -- 5.2 Supply Chains (IBM Food Trust and GoDirect Trade) -- 5.3 Healthcare (Change Healthcare) -- 5.4 Banking (VISA B2B Connect) -- 6 How HLF Meets Enterprise Requirements -- 6.1 Resilience Requirements -- 6.2 Performance Requirements -- 7 Performance Evaluation -- 7.1 Multi Ordering Services Performance -- 7.2 Mixed Workloads -- 7.3 Discussion -- 8 Conclusion -- References -- Using SGX for Meta-Transactions Support in Ethereum DApps -- 1 Introduction -- 2 Background -- 3 Basic Solution Design -- 4 Discussion and Open Directions -- 5 Conclusion -- References -- Understanding Cryptocurrencies Trends Correlations -- 1 Introduction -- 2 Background -- 3 Preliminary Evaluation -- 4 Related Work -- 5 Conclusion and Future Work -- References -- Rebop: Reputation-Based

Incentives in Committee-Based Blockchains -- 1 Introduction -- 2 Committee-Based Blockchains -- 3 System and Protocol Model -- 4 Attacks and Incentives -- 5 Rebop: Reputation-Based Reward Opportunity -- 6 Incentive Analysis -- 6.1 Baseline Analysis -- 6.2 Collusion Resistance of Rebop -- 6.3 Preventing Byzantine Attacks -- 7 Simulation Results -- 7.1 Resistance Against Colluding Processes -- 7.2 Byzantine Resistance -- 8 Related Works -- 9 Conclusion -- References -- Fault Tolerance -- Lesser Evil: Embracing Failure to Protect Overall System Availability -- 1 Introduction -- 2 Problem Statement -- 3 Erlang -- 4 Lesser Evil -- 4.1 Entities -- 4.2 Badness -- 4.3 Strategy -- 4.4 Compensating Actions -- 4.5 Architecture -- 4.6 Discussion -- 4.7 Note on Applicability -- 5 Evaluation.

5.1 Test Subject -- 5.2 Configuration -- 5.3 Experiments -- 5.4 Results -- 5.5 Conclusion and Limitations -- 5.6 Threats to Validity -- 6 Related Work -- 7 Conclusion -- References -- Failure Root Cause Analysis for Microservices, Explained -- 1 Introduction -- 2 Motivating Scenario -- 3 Declarative Failure Root Cause Analysis -- 4 Prototype Implementation -- 5 Evaluation -- 6 Related Work -- 7 Conclusions -- References -- Trusted Execution, Deep Learning, and IoT -- Attestation Mechanisms for Trusted Execution Environments Demystified -- 1 Introduction -- 2 Attestation -- 2.1 Local Attestation -- 2.2 Remote Attestation -- 2.3 Mutual Attestation -- 3 Issuing Attestations Using TEEs -- 3.1 TEE Cornerstone Features -- 3.2 Trusted Environments and Remote Attestation -- 3.3 Intel SGX -- 3.4 Arm TrustZone Architectures -- 3.5 AMD SEV -- 3.6 RISC-V Architectures -- 4 Future Work -- 5 Conclusion -- References -- Accelerate Model Parallel Deep Learning Training Using Effective Graph Traversal Order in Device Placement -- 1 Introduction -- 2 Preliminaries -- 2.1 Device Placement -- 2.2 Placeto -- 2.3 Graph Traversal Order -- 3 Graph Traversal Orders in Device Placement -- 3.1 Challenges in Device Placement -- 3.2 Impact of Graph Traversal Orders -- 4 Evaluation -- 4.1 Datasets -- 4.2 Experiment Setup -- 4.3 Results and Analysis -- 4.4 Discussion and Guidelines -- 5 Related Work -- 6 Conclusion -- References -- Analysis of the Impact of Interaction Patterns and IoT Protocols on Energy Consumption of IoT Consumer Applications -- 1 Introduction -- 2 Consuming IoT Applications: Architecture, Interaction Patterns and Protocols -- 2.1 Distributed IoT Architecture -- 2.2 Interaction Patterns -- 2.3 IoT Protocols -- 3 Related Work -- 4 Experimental Methodology -- 4.1 Experimental Setup -- 4.2 Process to Isolate the Communication Energy Consumption.

4.3 Experimental Plan -- 4.4 Threats to Validity -- 5 Analysis -- 5.1 (RQ1) Impact of the Interaction Pattern -- 5.2 (RQ2) Impact of the Application Protocol -- 5.3 (RQ3) Impact of the QoS in MQTT -- 5.4 (RQ4) Impact of the Payload -- 5.5 Guidelines for IoT Consumer Application Designers -- 6 Conclusions -- References -- Elastic and Scalable Systems -- The HDFS Replica Placement Policies: A Comparative Experimental Investigation -- 1 Introduction -- 2 Data Replication in HDFS -- 2.1 Block Re-replication -- 2.2 Replica Rearrangement -- 3 Replica Placement Policies -- 4 Related Work -- 5 Experimentation -- 5.1 First Stage: Data Load -- 5.2 Second Stage: Block Re-replication -- 5.3 Third Stage: Replica Rearrangement -- 6 Conclusions and Future Work -- References -- An Elastic and Scalable Topic-Based Pub/Sub System Using Deep Reinforcement Learning -- 1 Introduction -- 2 System Architecture and Model -- 2.1 Apache Kafka -- 2.2 System Architecture and Model -- 3 Proposed Methodology -- 3.1 Deep Reinforcement Learning -- 3.2 Scaling Decisions -- 4 Evaluation -- 5 Related Work -- 6 Conclusions -- References -- Invited Paper -- Challenges in Automated Measurement of Pedestrian

Dynamics -- 1 Introduction -- 2 Automated Measurement of Pedestrian Behavior -- 3 Protecting Privacy Through Detection k-anonymity -- 3.1 Approach -- 3.2 Evaluation -- 3.3 Reflection -- 4 Protecting Privacy Through Homomorphically Encrypted Bloom Filters -- 4.1 Approach -- 4.2 Evaluation -- 4.3 Reflection -- 5 Other Challenges -- 5.1 Behavior of Carry-On Devices and (non)overlapping Sensor Ranges -- 5.2 MAC-Address Randomization -- 5.3 Stationary Versus Nonstationary Devices -- 6 Conclusions -- References -- Author Index.

Sommario/riassunto

This book constitutes the refereed proceedings of the 22nd IFIP WG 6.1 International Conference on Distributed Applications and Interoperable Systems, DAIS 2022, held in Lucca, Italy, in June 2022, as part of the 17th International Federated Conference on Distributed Computing Techniques, DisCoTec 2022. The 9 full papers and 2 short papers presented in this book were carefully reviewed and selected from 19 submissions. DAIS addresses all practical and conceptual aspects of distributed applications, including their design, modeling, implementation and operation, the supporting middleware, appropriate software engineering methodologies and tools, as well as experimental studies and applications. .
