The Theory Of Database Concurrency Control

Christos H. Papadimitriou - 1986

This book describes the theory, algorithms, and practical implementation techniques behind transaction processing in information technology systems.

Concurrency Control and Recovery in Database Systems - Philip A. Bernstein - 1987

This book focuses on the theory, algorithms, and practical implementation techniques behind transaction processing in information technology systems.

Database Concurrency Control

An Optimality Theory of Concurrency Control for Databases


This book develops the design theory of database concurrency control and failure atomicity. It shows how this theory can be used to develop practical algorithms for database concurrency control.

Concurrency Control and Recovery in Database Systems - Philip A. Bernstein - 1987

The book is intended for a senior-level undergraduate or a graduate course in a computer science or engineering department. The prerequisites for the book are general in nature. A student should have the mathematical sophistication of a senior in computer science or engineering. The book introduces the student to the design theory of database concurrency control and failure atomicity.

Concurrency in Programming and Database Systems

Concurrency in Programming and Database Systems - Arthur J. Bernstein - 1993

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Concurrency Control and Database Systems

Concurrency Control and Database Systems - H. T. Kung - 1980

This book focuses on the theory, algorithms, and practical implementation techniques behind transaction processing in information technology systems.

Database Management Systems

Database Management Systems - Vijay Kumar - 2006

This book describes the theory, algorithms, and practical implementation techniques behind transaction processing in information technology systems.
transactions work. This book covers the basics of transactions as well as transaction isolation levels and how they play in database systems, showing how locks are essential in allowing high-concurrency workloads. You will learn about lock access levels and lock granularities from the user level as well as table locks to record and gap locks. Most importantly, the book covers troubleshooting techniques when locking becomes a pain point. Several of the case studies are based on real-world scenarios, showing how locks are essential in allowing high-concurrency workloads.

Main Memory Database Systems - Franba Faerther - 2017-07-20

With growing memory sizes and memory prices dropping by a factor of 10 every 5 years, data having a “primary home” in RAM is an emerging trend. Consequently, research on the design and implementation of the architectural pillars of relational database systems that optimized for disk-resident data. The result of these memory-optimized designs are systems that are more scalable and permit more complex applications. A number of open-source projects (e.g., concurrent, transactional database systems) that achieve orders of magnitude performance improvements over traditional designs. This monograph provides an overview of recent developments in main-memory database systems. It covers five main issues: high-level design choices, performance, scalability, transactional semantics, and parallelism. The authors present the current state of research on the architectural pillars of relational database systems that optimized for disk-resident data. The result of these memory-optimized designs are systems that are more scalable and permit more complex applications. A number of open-source projects (e.g., concurrent, transactional database systems) that achieve orders of magnitude performance improvements over traditional designs.


"This reference expands the field of database technologies through four-volumes of in-depth, advanced research articles from nearly 300 of the world’s leading professionals." Provided by publisher.

Advances in Concurrent Engineering - Birou Prasad - 1997-08-11

This book describes how the concurrent engineering process is being performed. The authors present the current state of the research results in this rapidly advancing area of computer science. Distributed and Parallel Database Object Management serves as an excellent reference, providing insights into some of the most important issues in the field.

Distributed and Parallel Database Object Management - Elsa Bertino - 2012-12-06

Distributed and Parallel Database Object Management brings together in one place important contributions and state-of-the-art research results in this rapidly advancing area of computer science. Distributed and Parallel Database Object Management serves as an excellent reference, providing insights into some of the most important issues in the field.

Distributed and Parallel Database Object Management Applications - A Min Tjoa - 2012-12-06

Use and development of database and expert systems can be found in all fields of computer science. The aim of this monograph is to provide a comprehensive account of advanced research articles from nearly 300 of the world’s leading professionals. Distributed and Parallel Database Object Management serves as an excellent reference, providing insights into some of the most important issues in the field.

Database and Expert Systems Applications - A Min Tjoa - 2012-12-06

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Encyclopedia of Computer Science and Technology - Allen Kent - 1996-02-05

Artificial Intelligence in Education in an Undergraduate Course Advising Expert System in Industrial Engineering - Noriko Hori - 1994-10-24

Computing Handbook, Third Edition: Information Systems and Information Technology demonstrates the richness and diversity of the field. It is an ideal reference tool for researchers, graduate students, and other professionals interested in the field. It is also an ideal reference for researchers, graduate students, and other professionals interested in the field. The book also makes a useful reference for researchers, graduate students, and other professionals interested in the field.

Concurrent Engineering - Jesper Wisborg Krogh - 2021-05-08

The book presents an overview of the current state of research and development in concurrent engineering. The book also provides an overview of the current state of research and development in concurrent engineering.
This volume contains the papers presented at the Fifth International Workshop on Database Machines. The papers cover a wide spectrum of topics on Database Machines and Knowledge Base Machines. Reports of major projects, ECRC, MCC, and ICFR are included. Topics on DBM cover many database architectures based on vector processing and hypercube parallel processing, VLSI oriented architecture, filter processor, sorting machine, concurrency control mechanism for DBM, main memory database, interconnection network for DBM, and performance evaluation. In this workshop much more attention was given to knowledge base management as compared to the previous four workshops. Many papers discuss deducation database processing. Architectures for semantic network, Joning, and production system were also proposed. We would like to express our deep thanks to all those who contributed to the success of the workshop. We would also like to express our appreciation for the valuable suggestions given to us by Prof. D. K. Hsiao, Prof. D. - Katherine Cox-Buday - 2017-07-19

Concurrency in Go - Katherine Cox-Buday - 2017-07-19

Concurrency can be notoriously difficult to get right, but fortunately, the Go open source programming language makes working with concurrency tractable and even easy. If you’re a developer familiar with Go, this practical book demonstrates best practices and patterns to help you incorporate concurrency into your systems. Author Katherine Cox-Buday takes you step-by-step through the process. You’ll understand how Go chooses to model concurrency, what issues arise from this model, and how you can compose primitives within this model to solve problems. Learn the skills and tools you need to confidently write and implement concurrent systems of any size. Understand how Go addresses fundamental problems that make concurrency difficult to do correctly. Learn the key differences between concurrency and parallelism. Dig into the syntax of Go’s memory synchronization primitives. Form patterns with these primitives to write maintainable concurrent code. Compose patterns into a series of patterns that enable you to write large, distributed systems that scale. Learn the synchronization behind goroutines and how Go’s runtime stitches everything together.

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Transaction Processing - Seppo Sippu - 2015-01-27

Transactions are a concept related to the logical database as seen from the perspective of database application programmers: a transaction is a sequence of database actions that is to be executed as an atomic unit of work. The processing of transactions on databases is a well-established area with many of its foundations having already been laid in the late 1970s and early 1980s. The unique feature of this textbook is that it bridges the gap between the theory of transactions on the logical database and the implementation of the related actions on the underlying physical database. The authors relate the logical database, which is composed of a dynamically changing set of data items with unique keys, and the underlying physical database with a set of fixed-size data and index pages on disk. Their treatment of transaction processing builds on the “do-redo-undo” recovery paradigm, and all methods and algorithms presented are carefully designed to be compatible with this paradigm as well as with write-ahead logging, serial-and-or-forcing buffering, and fine-grained concurrency control. Chapters 1 to 6 address the basics needed to fully appreciate transaction processing on a centralized database system within the context of our transaction model, covering topics like ACID properties, database integrity, buffering, rollbacks, isolation, and the interplay of logical locks and physical latches. Chapters 7 and 8 present advanced features including deadlock-free algorithms for reading, inserting and deleting tuples, while the remaining chapters cover additional advanced topics extending on the preceding foundational chapters, including multi-granularity locking, bulk actions, versioning, distributed updates, and write-intensive transactions. This book is primarily intended as a text for advanced undergraduate or graduate courses on database management in general or transaction processing in particular.

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Atomic Transactions - Nancy A. Lynch - 1994

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