



David Cheriton

Professor of Computer Science, Emeritus
Communication

CONTACT INFORMATION

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Bio

BIO

Cheriton's research includes the areas of high-performance distributed systems, and high-speed computer communication with a particular interest in protocol design. He leads the Distributed Systems Group in the TRIAD project, focused on understanding and solving problems with the Internet architecture. He has also been teaching and writing about object-oriented programming, building on his experience with OOP in systems building.

ACADEMIC APPOINTMENTS

- Emeritus Faculty, Acad Council, Communication

HONORS AND AWARDS

- SigComm'03 Award, Association for Computing Machinery (2003)

PROFESSIONAL EDUCATION

- PhD, Waterloo (1978)

LINKS

- <https://web.stanford.edu/~cheriton>: <https://web.stanford.edu/~cheriton>

Publications

PUBLICATIONS

- **Efficient Correction of Anomalies in Snapshot Isolation Transactions** *ACM TRANSACTIONS ON ARCHITECTURE AND CODE OPTIMIZATION*
Litz, H., Dias, R. J., Cheriton, D. R.
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- **Scalable Network-Layer Defense Against Internet Bandwidth-Flooding Attacks** *IEEE-ACM TRANSACTIONS ON NETWORKING*
Argyrazi, K., Cheriton, D. R.
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- **Active Internet Traffic Filtering: Real-time response to denial-of-service attacks** *2005 USENIX Annual Technical Conference*

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- Argyrazi, K., Cheriton, D. R.
USENIX ASSOC.2005: 135–148
- **Feedback based routing** *1st HotNets Workshop*
Zhu, D. P., Gritter, M., Cheriton, D. R.
ASSOC COMPUTING MACHINERY.2003: 71–76
 - **TCP-SMO: Extending TCP to support medium-scale multicast applications** *21st Annual Joint Conference of the IEEE-Computer-and-Communications-Societies*
Liang, S., Cheriton, D.
IEEE.2002: 1356–1365
 - **An architecture for content routing support in the Internet** *3rd USENIX Symposium on Internet Technologies and Systems (USITS 01)*
Gritter, M., Cheriton, D. R.
USENIX ASSOC.2001: 37–48
 - **IP multicast channels: Express support for large-scale single-source applications** *ACM Conference on Applications, Technologies, Architectures, and Protocols for Computer Communications (SIGCOMM 99)*
Holbrook, H. W., Cheriton, D. R.
ASSOC COMPUTING MACHINERY.1999: 65–78
 - **Borrowed-Virtual-Time (BVT) scheduling: supporting latency-sensitive threads in a general-purpose scheduler** *17th ACM Symposium on Operating Systems Principles (SOSP '99)*
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 - **Scalable web caching of frequently updated objects using reliable multicast** *2nd USENIX Symposium on Internet Technologies and Systems (USITS 99)*
Li, D., Cheriton, D. R.
USENIX ASSOC.1999: 1–12
 - **OTERS (on-tree efficient recovery using subcasting): A reliable multicast protocol** *6th International Conference on Network Protocols (ICNP 98)*
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I E E E, COMPUTER SOC PRESS.1998: 237–245
 - **Optimized memory-based messaging: Leveraging the memory system for high-performance communication** *COMPUTING SYSTEMS*
Cheriton, D. R., Kutter, R. A.
1996; 9 (3): 179-215
 - **The synergy between non-blocking synchronization and operating system structure** *2nd Symposium on Operating Systems Design and Implementation (OSDI 96)*
Greenwald, M., CHERITON, D.
USENIX ASSOC.1996: 123–136
 - **Specializing object-oriented RPC for functionality and performance** *16th International Conference on Distributed Computing Systems*
ZELESKO, M. J., Cheriton, D. R.
IEEE COMPUTER SOC.1996: 175–187
 - **Using projection aggregations to support scalability in distributed simulation** *16th International Conference on Distributed Computing Systems*
Singhal, S. K., Cheriton, D. R.
IEEE COMPUTER SOC.1996: 196–206
 - **EXPLOITING POSITION HISTORY FOR EFFICIENT REMOTE RENDERING IN NETWORKED VIRTUAL-REALITY** *PRESENCE-TELEOPERATORS AND VIRTUAL ENVIRONMENTS*
Singhal, S. K., Cheriton, D. R.
1995; 4 (2): 169-193
 - **CHIRON PARALLEL PROGRAM PERFORMANCE VISUALIZATION SYSTEM** *COMPUTER-AIDED DESIGN*
GOOSEN, H. A., Karlin, A. R., CHERITON, D., Polzin, D.
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- **A CACHING MODEL OF OPERATING SYSTEM KERNEL FUNCTIONALITY** *1st USENIX Symposium on Operating Systems Design and Implementation (OSDI)*
Cheriton, D. R., DUDA, K. J.
USENIX ASSOC.1994: 179-193
- **RESTRUCTURING A PARALLEL SIMULATION TO IMPROVE CACHE BEHAVIOR IN A SHARED-MEMORY MULTIPROCESSOR - THE VALUE OF DISTRIBUTED SYNCHRONIZATION** *7th Workshop on Parallel and Distributed Simulation (PADS 93)*
Cheriton, D. R., GOOSEN, H. A., Holbrook, H., Machanick, P.
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- **APPLICATION-CONTROLLED PHYSICAL MEMORY USING EXTERNAL PAGE-CACHE MANAGEMENT** *SIGPLAN NOTICES*
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- **OPERATING-SYSTEMS - A VISION OF THE YEAR 2000** *COMPUTER*
Boykin, J., CHERITON, D.
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- **PARADIGM - A HIGHLY SCALABLE SHARED-MEMORY MULTICOMPUTER ARCHITECTURE** *COMPUTER*
Cheriton, D. R., GOOSEN, H. A., Boyle, P. D.
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- **BLAZENET - A PACKET-SWITCHED WIDE-AREA NETWORK WITH PHOTONIC DATA PATH** *IEEE TRANSACTIONS ON COMMUNICATIONS*
Haas, Z., Cheriton, D. R.
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- **MULTICAST ROUTING IN DATAGRAM INTERNETWORKS AND EXTENDED LANS** *ACM TRANSACTIONS ON COMPUTER SYSTEMS*
DEERING, S. E., Cheriton, D. R.
1990; 8 (2): 85-110
- **VMTF AS THE TRANSPORT LAYER FOR HIGH-PERFORMANCE DISTRIBUTED SYSTEMS** *IEEE COMMUNICATIONS MAGAZINE*
Cheriton, D. R., Williamson, C. L.
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- **DECENTRALIZING A GLOBAL NAMING SERVICE FOR IMPROVED PERFORMANCE AND FAULT TOLERANCE** *ACM TRANSACTIONS ON COMPUTER SYSTEMS*
Cheriton, D. R., MANN, T. P.
1989; 7 (2): 147-183
- **THE V-DISTRIBUTED SYSTEM** *COMMUNICATIONS OF THE ACM*
Cheriton, D. R.
1988; 31 (3): 314-333
- **UIO - A UNIFORM I/O SYSTEM INTERFACE FOR DISTRIBUTED SYSTEMS** *ACM TRANSACTIONS ON COMPUTER SYSTEMS*
Cheriton, D. R.
1987; 5 (1): 12-46
- **REQUEST-RESPONSE AND MULTICAST INTERPROCESS COMMUNICATION IN THE V-KERNEL** *LECTURE NOTES IN COMPUTER SCIENCE*
Cheriton, D. R.
1987; 248: 296-312
- **FILE ACCESS PERFORMANCE OF DISKLESS WORKSTATIONS** *ACM TRANSACTIONS ON COMPUTER SYSTEMS*
Lazowska, E. D., Zahorjan, J., Cheriton, D. R., Zwaenepoel, W.
1986; 4 (3): 238-268
- **DISTRIBUTED PROCESS GROUPS IN THE V-KERNEL** *ACM TRANSACTIONS ON COMPUTER SYSTEMS*
Cheriton, D. R., Zwaenepoel, W.
1985; 3 (2): 77-107
- **AMAZE - A MULTIPLAYER COMPUTER GAME** *IEEE SOFTWARE*

BERGLUND, E. J., Cheriton, D. R.
1985; 2 (3): 30-39

- **THE V-KERNEL - A SOFTWARE BASE FOR DISTRIBUTED SYSTEMS** *IEEE SOFTWARE*

Cheriton, D. R.
1984; 1 (2): 19-?