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| **Minor Award Name** | Distributed Systems |
| **Minor Award Code** | 6N0856 |
| **Level** | 6 |

**Suggested resources to support delivery:**

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| --- | --- | --- | --- | --- |
| **Theme/Topic** | **Type** | **Relevance** | **Author/Source** | **Web Link** |
| Distributed Architecture Models | Book  Book  Book  E-Book  Lecture Notes  Technical Report  Technical Report  Power Point | This book describes the types of distributed systems that exist. It discusses the architectures and middleware. It provides examples of distributed systems.  This book discusses various types of distributed models. It provides various case study examples of distributed system applications.  This book discusses distributed shared memory.  This EBook discusses distributed architecture systems as a middleware approach and provides suitable examples.  This pdf document summarises and categorises various Distributed Systems models that exist.  This technical report provides a review of distributed shared memory techniques.  A survey of distributed shared memory models is provided in this publication.  This lecture provides information on Distributed Shared Memory. | Authors: Andrew S. Tanenbaum and Maarten Van Steen. Published by Prentice Hall.  Authors: George Coulouris, Jean Dollimore, Tim Kindberg and Gordon Blair. Published by Addison Wesley Publications.  Authors: A. D. Kshemkalyani and M. Singhai. Published by Cambridge University Press.  Authors: A. Pudor, K. Romer and F. Pilhofer  Author: Petru Iles, IDA.  Authors: M. R. Eskicioglu and T. A. Marsland.  Authors: J. Protic, M. Tomasevic, V. Milutinovic  Author: Illinois Institute of Technology. | <http://www.amazon.com/Distributed-Systems-Principles-Paradigms-Edition/dp/0132392275>  <http://www.amazon.com/Distributed-Systems-Concepts-Design-Edition/dp/0132143011>  <http://www.amazon.com/Distributed-Computing-Principles-Algorithms-Systems/dp/0521189845>  <http://www.cin.ufpe.br/~gas2/puder-middleware-05-book.pdf>  <https://www.ida.liu.se/~TDDB37/lecture-notes/lect2-3.frm.pdf>  <https://webdocs.cs.ualberta.ca/~tony/TechnicalReports/TR96-22.pdf>  <http://www.computer.org/csdl/proceedings/hicss/1995/6930/00/69300074.pdf>  [www.cs.iit.edu/~cs550/lectures/10\_distributed\_**shared**\_**memory**.ppt](http://www.cs.iit.edu/~cs550/lectures/10_distributed_shared_memory.ppt) |
| Networking | Book  Book  Weblink  Weblink | This book covers all of the networking terminologies you will need for distributed systems including various topologies such as ring, star, tree etc. as well as the OSI Model. It also discusses the internet and protocols including TCP/IP and UDP.  This book discusses the OSI model in terms of layered communication.  This weblink provides great information and examples of networking topologies.  This weblink provides information on the OSI model. | Author: Doug Lowe  Authors: Andrew S. Tanenbaum and Maarten Van Steen. Published by Prentice Hall  Author: V. Beal  Author: V. Beal | <http://www.amazon.com/Networking-All-One-For-Dummies/dp/1118380983>  <http://www.amazon.com/Distributed-Systems-Principles-Paradigms-Edition/dp/0132392275>  <http://www.webopedia.com/quick_ref/topologies.asp>  <http://www.webopedia.com/quick_ref/OSI_Layers.asp> |
| Messaging and communication | Book  Book  Weblink  Weblink  Lecture Notes | A chapter is dedicated in this book to communication in Distributed Systems. It discusses remote procedure calls (RPC), message-oriented communication, stream-oriented communication as well as multicast communication.  RPC and Java’s RMI is discussed in this book.  Java’s RMI is discussed in detail here.  A description of RPCs.  This set of notes provides theory on RPC. | Authors: Andrew S. Tanenbaum and Maarten Van Steen. Published by Prentice Hall  Authors: George Coulouris, Jean Dollimore, Tim Kindberg and Gordon Blair. Published by Addison Wesley Publications.  Author: Oracle  Author: AD Marshall, Cardiff University.  Author: D. Petcu | <http://www.amazon.com/Distributed-Systems-Principles-Paradigms-Edition/dp/0132392275>  <http://www.amazon.com/Distributed-Systems-Concepts-Design-Edition/dp/0132143011>  <http://www.oracle.com/technetwork/java/javase/tech/index-jsp-138781.html>  <https://www.cs.cf.ac.uk/Dave/C/node33.html>  <http://web.info.uvt.ro/~petcu/distrib/SD4.pdf> |
| Concurrent Programming | Book  Book  EBook  Weblink  Weblink  Tutorial  EBook | Multithreading, mutual exclusion algorithms, cryptography algorithms and message passing interfaces (MPI) are all discussed in this book.  Interprocess and Indirect communications are discussed in this book including MPI and shared memory approaches. Cryptography and mutual exclusion algorithms are also described.  This ebook provides information on  concurrent programming in Java including threads and RPCs.  A definition of multithreading.  Multithreading in Java.  This document describes various distributed mutual exclusion algorithms.  This wikibook provides a vast amount of information on cryptography. | Authors: Andrew S. Tanenbaum and Maarten Van Steen. Published by Prentice Hall  Authors: George Coulouris, Jean Dollimore, Tim Kindberg and Gordon Blair. Published by Addison Wesley  Author: Wikibooks  Author: TechTarget  Author: Tutorials Point  Author: A. Kshemkalyani and M. Singhal.  Author: Wikibooks | <http://www.amazon.com/Distributed-Systems-Principles-Paradigms-Edition/dp/0132392275>  <http://www.amazon.com/Distributed-Systems-Concepts-Design-Edition/dp/0132143011>  <https://en.wikibooks.org/wiki/Java_Programming/Concurrent_Programming>  <http://whatis.techtarget.com/definition/multithreading>  <http://www.tutorialspoint.com/java/java_multithreading.htm>  <https://www.cs.uic.edu/~ajayk/Chapter9.pdf>  <https://en.wikibooks.org/wiki/Cryptography> |
| Problems | Book  Book  EBook  Tutorial  Technical Report | Clock Synchronisation, fault tolerance and security in distributed systems are all described in detail in this book.  Security issues, co-ordination and agreement issues are described in detail in this book.  This ebook describes the concept of deadlock.  This tutorial describes the issue of clock synchronisation in distributed systems.  Some issues, problems and solutions of distributed software systems are described in this document. | Authors: Andrew S. Tanenbaum and Maarten Van Steen. Published by Prentice Hall  Authors: George Coulouris, Jean Dollimore, Tim Kindberg and Gordon Blair. Published by Addison Wesley  Author: Wikibook  Author: J.Kangasharju  Author: K. S. Mishra and A. K. Tripathi | <http://www.amazon.com/Distributed-Systems-Principles-Paradigms-Edition/dp/0132392275>  <http://www.amazon.com/Distributed-Systems-Concepts-Design-Edition/dp/0132143011>  <https://en.wikibooks.org/wiki/Operating_System_Design/Concurrency/Deadlock>  <http://www.cs.helsinki.fi/webfm_send/1232>  <http://www.ijcsit.com/docs/Volume%205/vol5issue04/ijcsit2014050420.pdf> |

**Useful Organisations:**

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| **Name** | **Contact Information** |
| DMOZ | <https://www.dmoz.org/Computers/Computer_Science/Distributed_Computing/> |
| DMOZ | <https://www.dmoz.org/Computers/Computer_Science/Distributed_Computing/Publications/> |

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| **MOOCs (Massive Online Open Courses)** | |
| Free access to online courses  Search regularly for new courses and new start dates | https://www.mooc-list.com/ |