

# Papers I Love

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## Contents

<b>1</b>	<b>Computer Science</b>	<b>2</b>
1.1	Algorithms . . . . .	2
1.1.1	Analysis . . . . .	2
1.1.2	Compression . . . . .	2
1.1.3	Hash . . . . .	2
1.1.4	Data Structures . . . . .	2
1.1.5	Elections + Consensus . . . . .	2
1.2	Architectures . . . . .	2
1.2.1	Computer Architecture . . . . .	2
1.2.2	Multi Tenancy . . . . .	3
1.2.3	REST . . . . .	3
1.2.4	SEDA . . . . .	3
1.2.5	Servers . . . . .	3
1.2.6	Other Architectures . . . . .	3
1.2.7	Patterns . . . . .	4
1.2.8	Overlay Networks . . . . .	4
1.2.9	Distributed Systems . . . . .	4
1.2.10	Event Based Architecture . . . . .	4
1.2.11	Resiliency . . . . .	5
1.3	Programming Paradigms . . . . .	5
1.3.1	Process Theory . . . . .	5
1.3.2	Object Oriented . . . . .	5
1.3.3	Double Dispatch . . . . .	5
1.4	Database . . . . .	6
1.5	Data Fusion . . . . .	6
<b>2</b>	<b>Mathematics</b>	<b>7</b>
2.1	Real Analysis . . . . .	7
2.2	Statistics . . . . .	7
<b>3</b>	<b>Economy</b>	<b>7</b>
3.1	Political Economy . . . . .	7
3.1.1	Taxes . . . . .	7

# 1 Computer Science

## 1.1 Algorithms

### 1.1.1 Analysis

1. Recursive Algorithms in Computer Science Courses: Fibonacci Numbers and Binomial Coefficients  
<http://venus.cs.qc.edu/~waxman/cs211%20spring%202009/why%20is%20recursive%20fibonacci%20so%20slow.pdf>
2. Binomial Coefficient Computation: Recursion or Iteration?  
<http://delab.csd.auth.gr/papers/SBI02m.pdf>

### 1.1.2 Compression

1. Data Compression Using Long Common Strings  
<http://www.cs.brandeis.edu/~dilant/cs175/%5BSiyong-Dong%5D.pdf>

### 1.1.3 Hash

1. SHA-1 and the Strict Avalanche Criterion  
<https://arxiv.org/pdf/1609.00616.pdf>

### 1.1.4 Data Structures

1. Bitlist New Full-Text Index for Low Space Cost and Efficient Keyword Search  
<http://www.vldb.org/pvldb/vol6/p1522-rao.pdf>

### 1.1.5 Elections + Consensus

1. Elections in a Distributed Computing System  
<http://academic.research.microsoft.com/Publication/716253/elections-in-a-distributed-computing-system>  
<http://homepage.cs.uiowa.edu/~ghosh/Bully.pdf>
2. The Part-Time Parliament  
<http://research.microsoft.com/en-us/um/people/lamport/pubs/lamport-paxos.pdf>
3. In Search of an Understandable Consensus Algorithm  
<https://ramcloud.atlassian.net/wiki/download/attachments/6586375/raft.pdf>

## 1.2 Architectures

### 1.2.1 Computer Architecture

1. Quantifying the Cost of Context Switch  
<http://www.cs.rochester.edu/u/cli/research/switch.pdf>

2. What Every Programmer Should Know About Memory  
<https://people.freebsd.org/~lstewart/articles/cpumemory.pdf>

### **1.2.2 Multi Tenancy**

1. Enabling Multi-Tenancy an Industrial Experience Report  
<http://swirl.tudelft.nl/twiki/pub/Main/TechnicalReports/TUD-SERG-2010-030.pdf>
2. Multi-Tenant SaaS Applications: Maintenance Dream or Nightmare  
<http://swirl.tudelft.nl/twiki/pub/Main/TechnicalReports/TUD-SERG-2010-031.pdf>
3. Towards an Elastic and Autonomic Multitenant Database  
<http://research.microsoft.com/en-us/um/people/srikanth/netdb11/netdb11papers/netdb11-final8.pdf>

### **1.2.3 REST**

1. Architectural Styles and the Design of Network-Based Software Architectures  
<http://academic.research.microsoft.com/Publication/1309313/architectural-styles-and-the-design-of-network-based-software-architectures>  
<http://www.ics.uci.edu/~fielding/pubs/dissertation/top.htm>

### **1.2.4 SEDA**

1. An Architecture for Highly Concurrent, Well-Conditioned Internet Services  
<http://academic.research.microsoft.com/Publication/112151/seda-an-architecture-for-well-conditioned-scalable-internet-services>  
<http://www.eecs.harvard.edu/~mdw/papers/mdw-phdthesis.pdf>

### **1.2.5 Servers**

1. Flash an Efficient and Portable Web Server  
[https://www.usenix.org/event/usenix99/full\\_papers/pai/pai.pdf](https://www.usenix.org/event/usenix99/full_papers/pai/pai.pdf)

### **1.2.6 Other Architectures**

1. The Monad Manifesto  
<http://www.jsnover.com/Docs/MonadManifesto.pdf>
2. The Hla Tutorial  
<http://www.pitch.se/hlatutorial>

### 1.2.7 Patterns

1. Active Object: An Object Behavioral Pattern for Concurrent Programming  
<http://www.cs.wustl.edu/~schmidt/PDF/Act-Obj.pdf>
2. Plop Half-Sync/half-Async: An Architectural Pattern for Efficient and Well-Structured Concurrent I/o  
<http://www.cs.wustl.edu/~schmidt/PDF/PLoP-95.pdf>

### 1.2.8 Overlay Networks

1. Architectures for an Event Notification Service Scalable to Wide-Area Networks  
<http://academic.research.microsoft.com/Publication/314658/architectures-for-an-event-notification-service-scalable-to-wide-area-networks>  
[http://www.inf.usi.ch/carzaniga/papers/phd\\_thesis.pdf](http://www.inf.usi.ch/carzaniga/papers/phd_thesis.pdf)

### 1.2.9 Distributed Systems

1. Time, Clocks and the Ordering of Events in a Distributed System  
<http://academic.research.microsoft.com/Publication/775212/time-clocks-and-the-ordering-of-events-in-a-distributed-system>  
<http://research.microsoft.com/en-us/um/people/lamport/pubs/pubs.html#time-clocks>  
<http://research.microsoft.com/en-us/um/people/lamport/pubs/time-clocks.pdf>
2. Distributed Snapshots: Determining Global States of Distributed Systems  
<http://academic.research.microsoft.com/Publication/803548/distributed-snapshots-determining-global-states-of-distributed-systems>  
<http://research.microsoft.com/en-us/um/people/lamport/pubs/pubs.html#chandy>  
<http://research.microsoft.com/en-us/um/people/lamport/pubs/chandy.pdf>
3. Your Coffee Shop Doesn't Use Two-Phase Commit  
[http://www.enterpriseintegrationpatterns.com/docs/IEEE\\_Software\\_Design\\_2PC.pdf](http://www.enterpriseintegrationpatterns.com/docs/IEEE_Software_Design_2PC.pdf)
4. A Brief History of Process Algebra  
<http://alexandria.tue.nl/extra1/wskrap/publichtml/200402.pdf>
5. Life Beyond Distributed Transactions: An Apostates Opinion  
<http://www.ics.uci.edu/~cs223/papers/cidr07p15.pdf>

### 1.2.10 Event Based Architecture

1. Design of a Scalable Event Notification Service Interface and Architecture  
<http://academic.research.microsoft.com/Publication/312680/design-of-a-scalable-event-notification-service-interface-and-architecture>  
<http://www.inf.usi.ch/carzaniga/papers/CU-CS-863-98.pdf>

2. Fast Forwarding for Content-Based Networking  
<http://academic.research.microsoft.com/Publication/7217/fast-forwarding-for-content-based-networking>  
<http://www.inf.usi.ch/carzaniga/papers/cucs-922-01-r1.pdf>
3. Real-Time Modelling of Dds for Event-Driven Applications  
<http://www.ctr.unican.es/publications/hpt-jjg-2012a.pdf>

#### **1.2.11 Resiliency**

1. Adaptive Overload Control for Busy Internet Servers  
<http://academic.research.microsoft.com/Publication/634136/adaptive-overload-control-for-busy-internet-servers>  
<http://www.eecs.harvard.edu/~mdw/papers/control-usits03.pdf>

### **1.3 Programming Paradigms**

#### **1.3.1 Process Theory**

1. A Brief History of Process Algebra  
<http://alexandria.tue.nl/extra1/wskrap/publichtml/200402.pdf>

#### **1.3.2 Object Oriented**

1. A Theory of Objects  
<http://academic.research.microsoft.com/Publication/1354440/a-theory-of-objects>  
[http://lucacardelli.name/Talks/1997-06%20A%20Theory%20of%20Object%20\(EC00P%20Tutorial\).pdf](http://lucacardelli.name/Talks/1997-06%20A%20Theory%20of%20Object%20(EC00P%20Tutorial).pdf)
2. Traits: Composable Units of Behaviour  
<http://scg.unibe.ch/archive/papers/Scha03aTraits.pdf>
3. Applying Traits to the Smalltalk Collection Hierarchy  
[http://www.researchgate.net/publication/2564879\\_Applying\\_Traits\\_to\\_the\\_Smalltalk\\_Collection\\_Hierarchy](http://www.researchgate.net/publication/2564879_Applying_Traits_to_the_Smalltalk_Collection_Hierarchy)
4. A Laboratory for Teaching Object-Oriented Thinking  
[http://www.inf.ed.ac.uk/teaching/courses/seoc/2007\\_2008/resources/CRC\\_00thinking.pdf](http://www.inf.ed.ac.uk/teaching/courses/seoc/2007_2008/resources/CRC_00thinking.pdf)

#### **1.3.3 Double Dispatch**

1. Design and evaluation of C++ open multi-methods  
<https://parasol.tamu.edu/~yuriys/papers/OMM10.pdf>

## 1.4 Database

1. The Ubiquitous B-Tree  
<http://people.cs.aau.dk/~simas/aalg06/UbiquitBtree.pdf>
2. Generalized Search Trees for Database Systems  
<http://db.cs.berkeley.edu/papers/vldb95-gist.pdf>
3. Concurrency and Recovery in Generalized Search TreeS  
<http://db.cs.berkeley.edu/papers/sigmod97-gist.pdf>
4. Data Cube: A Relational Aggregation Operator Generalizing Group-By, Cross-Tab, and Sub-Totals  
<http://research.microsoft.com/pubs/69578/tr-95-22.pdf>
5. Query Optimization in Microsoft Sql Server PDW  
<http://academic.research.microsoft.com/Publication/56916436/query-optimization-in-microsoft-sql-server-pdw>
6. Druid: A Real-Time Analytical Data Store <http://static.druid.io/docs/druid.pdf>
7. Map-Reduce: Simplified Dataprocessing on Large Clusters  
<http://static.googleusercontent.com/media/research.google.com/en/us/archive/mapreduce-osdi04.pdf>
8. Googles Mapreduce Programming Model Revisited  
<http://www.idt.mdh.se/kurser/cd5100/ht06/MapReduce/Ralf-Laemmel-paper/paper.pdf>
9. Cassandra - a Decentralized Structured Storage System  
<http://www.cs.cornell.edu/projects/ladis2009/papers/lakshman-ladis2009.pdf>
10. Bigtable: A Distributed Storage System for Structured Data  
<http://static.googleusercontent.com/media/research.google.com/en//archive/bigtable-osdi06.pdf>
11. Dynamo: Amazons Highly Available Key-Value Store  
<http://s3.amazonaws.com/AllThingsDistributed/sosp/amazon-dynamo-sosp2007.pdf>
12. Solving Big Data Challenges for Enterprise Application Performance Management  
[http://vldb.org/pvldb/vol15/p1724\\_tilmanrabl\\_vldb2012.pdf](http://vldb.org/pvldb/vol15/p1724_tilmanrabl_vldb2012.pdf)

## 1.5 Data Fusion

1. A Generic Architecture for Fusion-Based Intrusion Detection Systems  
[https://rcdeboer.home.xs4all.nl/rcdb\\_thesis.pdf](https://rcdeboer.home.xs4all.nl/rcdb_thesis.pdf)

## **2 Mathematics**

### **2.1 Real Analysis**

1. COISAS QUE O LUS PRECISA APRENDER  
<http://www.todasasconfiguracoes.com/wp-content/uploads/2012/04/luis.pdf>

### **2.2 Statistics**

1. A Note on the Generation of Random Normal Deviates  
<http://projecteuclid.org/euclid.aoms/1177706645>
2. Tidy Data  
<http://vita.had.co.nz/papers/tidy-data.pdf>
3. A Tutorial on Principal Component Analysis - Derivation, Discussion and Singular Value Decomposition  
[https://www.cs.princeton.edu/picasso/mats/PCA-Tutorial-Intuition\\_jp.pdf](https://www.cs.princeton.edu/picasso/mats/PCA-Tutorial-Intuition_jp.pdf)
4. An introduction to ROC analysis  
<https://ccrma.stanford.edu/workshops/mir2009/references/ROCintro.pdf>

### **2.3 Forecast**

1. Forecasting Global Climate Change  
[https://faculty.wharton.upenn.edu/wp-content/uploads/2015/02/GlobalClimateChange-FWP-\(2\)\\_2.pdf](https://faculty.wharton.upenn.edu/wp-content/uploads/2015/02/GlobalClimateChange-FWP-(2)_2.pdf)

## **3 Economy**

### **3.1 Political Economy**

#### **3.1.1 Taxes**

1. The Laffer Curve Past, Present, and Future  
[http://s3.amazonaws.com/thf\\_media/2004/pdf/bg1765.pdf](http://s3.amazonaws.com/thf_media/2004/pdf/bg1765.pdf)
2. Dynamic Revenue Estimation  
<https://ideas.repec.org/a/aea/jecper/v10y1996i1p141-57.html>
3. Dynamic Scoring an Introduction to the Issues  
[https://www.aeaweb.org/annual\\_mtg\\_papers/2005/0107\\_1430\\_1304.pdf](https://www.aeaweb.org/annual_mtg_papers/2005/0107_1430_1304.pdf)