Table of Contents

[General and reference 3](#_Toc320886565)

[Hardware 3](#_Toc320886566)

[Computer systems organization 8](#_Toc320886567)

[Networks 9](#_Toc320886568)

[Software and its engineering 12](#_Toc320886569)

[Theory of computation 16](#_Toc320886570)

[Mathematics of computing 21](#_Toc320886571)

[Information systems 24](#_Toc320886572)

[Security and privacy 30](#_Toc320886573)

[Human-centered computing 32](#_Toc320886574)

[Computing methodologies 35](#_Toc320886575)

[Applied computing 40](#_Toc320886576)

[Social and professional topics 44](#_Toc320886577)

[Proper nouns: People, technologies and companies 47](#_Toc320886578)

## 1. General and reference

**Document types**

**-Surveys and overviews**

--Reference works

-- General conference proceedings

-- Biographies

-- General literature

-- Computing standards, RFCs and guidelines

**- Cross-computing tools and techniques**

-- Reliability

-- Empirical studies

-- Measurement

-- Metrics

-- Evaluation

-- Experimentation

-- Estimation

-- Design

-- Performance

-- Validation

-- Verification

## 2. Hardware

**Printed circuit boards**

-- Electromagnetic interference and compatibility

-- PCB design and layout

Communication hardware, interfaces and storage

-- Signal processing systems

-- Digital signal processing

-- Beamforming

-- Noise reduction

-- Sensors and actuators

-- Buses and high-speed links

-- Displays and imagers

-- External storage

-- Networking hardware

-- Printers

-- Sensor applications and deployments

-- Sensor devices and platforms

-- Sound-based input / output

-- Tactile and hand-based interfaces

-- Touch screens

-- Haptic devices

-- Scanners

-- Wireless devices

-- Wireless integrated network sensors

-- Electro-mechanical devices

Integrated circuits

-- 3D integrated circuits

-- Interconnect

-- Input / output circuits

-- Metallic interconnect

-- Photonic and optical interconnect

-- Radio frequency and wireless interconnect

-- Semiconductor memory

-- Dynamic memory

-- Static memory

-- Non-volatile memory

-- Read-only memory

-- Digital switches

-- Transistors

-- Logic families

**-- Logic circuits**

-- Arithmetic and datapath circuits

-- Asynchronous circuits

-- Combinational circuits

-- Design modules and hierarchy

-- Finite state machines

-- Sequential circuits

-- Reconfigurable logic and FPGAs

-- Hardware accelerators

-- High-speed input / output

-- Programmable logic elements

-- Programmable interconnect

-- Reconfigurable logic applications

Very large scale integration design

-- 3D integrated circuits

-- Analog and mixed-signal circuits

-- Data conversion

-- Clock generation and timing

-- Analog and mixed-signal circuit optimization

-- Radio frequency and wireless circuits

-- Wireline communication

-- Analog and mixed-signal circuit synthesis

-- Application-specific VLSI designs

-- Application specific integrated circuits

-- Application specific instruction set processors

-- Application specific processors

-- Design reuse and communication-based design

-- Network on chip

-- System on a chip

-- Platform-based design

-- Hard and soft IP

-- Design rules

-- Economics of chip design and manufacturing

-- Full-custom circuits

-- VLSI design manufacturing considerations

-- On-chip resource management

-- On-chip sensors

-- Standard cell libraries

-- VLSI packaging

-- Die and wafer stacking

-- Input / output styles

-- Multi-chip modules

-- Package-level interconnect

-- VLSI system specification and constraints

Power and energy

-- Thermal issues

-- Temperature monitoring

-- Temperature simulation and estimation

-- Temperature control

-- Temperature optimization

-- Energy generation and storage

-- Batteries

-- Fuel-based energy

-- Renewable energy

-- Reusable energy storage

-- Energy distribution

-- Energy metering

-- Power conversion

-- Power networks

-- Smart grid

-- Impact on the environment

-- Power estimation and optimization

-- Switching devices power issues

-- Interconnect power issues

-- Circuits power issues

-- Chip-level power issues

-- Platform power issues

-- Enterprise level and data centers power issues

Electronic design automation

-- High-level and register-transfer level synthesis

-- Datapath optimization

-- Hardware-software codesign

-- Resource binding and sharing

-- Operations scheduling

-- Hardware description languages and compilation

-- Logic synthesis

-- Combinational synthesis

-- Circuit optimization

-- Sequential synthesis

-- Technology-mapping

-- Transistor-level synthesis

-- Modeling and parameter extraction

-- Physical design (EDA)

-- Clock-network synthesis

-- Packaging

-- Partitioning and floorplanning

-- Placement

-- Physical synthesis

-- Power grid design

-- Wire routing

-- Timing analysis

-- Electrical-level simulation

-- Model-order reduction

-- Compact delay models

-- Static timing analysis

-- Statistical timing analysis

-- Transition-based timing analysis

-- Methodologies for EDA

-- Best practices for EDA

-- Design databases for EDA

-- Software tools for EDA

Hardware validation

-- Functional verification

-- Model checking

-- Coverage metrics

-- Equivalence checking

-- Semi-formal verification

-- Simulation and emulation

-- Transaction-level verification

-- Theorem proving and SAT solving

-- Assertion checking

-- Physical verification

-- Design rule checking

-- Layout-versus-schematics

-- Power and thermal analysis

-- Timing analysis and sign-off

-- Post-manufacture validation and debug

-- Bug detection, localization and diagnosis

-- Bug fixing (hardware)

-- Design for debug

Hardware test

-- Analog, mixed-signal and radio frequency test

-- Board- and system-level test

-- Defect-based test

-- Design for testability

-- Built-in self-test

-- Online test and diagnostics

-- Test data compression

-- Fault models and test metrics

-- Memory test and repair

-- Hardware reliability screening

-- Test-pattern generation and fault simulation

-- Testing with distributed and parallel systems

Robustness

-- Fault tolerance

-- Error detection and error correction

-- Failure prediction

-- Failure recovery, maintenance and self-repair

-- Redundancy

-- Self-checking mechanisms

-- System-level fault tolerance

-- Design for manufacturability

-- Process variations

-- Yield and cost modeling

-- Yield and cost optimization

-- Hardware reliability

-- Aging of circuits and systems

-- Circuit hardening

-- Early-life failures and infant mortality

-- Process, voltage and temperature variations

-- Signal integrity and noise analysis

-- Transient errors and upsets

-- Safety critical systems

Emerging technologies

-- Analysis and design of emerging devices and systems

-- Emerging architectures

-- Emerging languages and compilers

-- Emerging simulation

-- Emerging tools and methodologies

-- Biology-related information processing

-- Bio-embedded electronics

-- Neural systems

-- Circuit substrates

-- III-V compounds

-- Carbon based electronics

-- Cellular neural networks

-- Flexible and printable circuits

-- Superconducting circuits

-- Electromechanical systems

-- Microelectromechanical systems

-- Nanoelectromechanical systems

-- Emerging interfaces

-- Memory and dense storage

-- Emerging optical and photonic technologies

-- Reversible logic

-- Plasmonics

-- Quantum technologies

-- Single electron devices

-- Tunneling devices

-- Quantum computation

-- Quantum communication and cryptography

-- Quantum error correction and fault tolerance

-- Quantum dots and cellular automata

-- Spintronics and magnetic technologies

## Computer systems organization

Architectures

-- Serial architectures

-- Reduced instruction set computing

-- Complex instruction set computing

-- Superscalar architectures

-- Pipeline computing

-- Stack machines

-- Parallel architectures

-- Very long instruction word

-- Interconnection architectures

-- Multiple instruction, multiple data

-- Cellular architectures

-- Multiple instruction, single data

-- Single instruction, multiple data

-- Systolic arrays

-- Multicore architectures

-- Distributed architectures

-- Cloud computing

-- Client-server architectures

-- n-tier architectures

-- Peer-to-peer architectures

-- Grid computing

-- Other architectures

-- Neural networks

-- Reconfigurable computing

-- Analog computers

-- Data flow architectures

-- Heterogeneous (hybrid) systems

-- Self-organizing autonomic computing

-- Optical computing

-- Quantum computing

-- Molecular computing

-- High-level language architectures

-- Special purpose systems

Embedded and cyber-physical systems

-- Sensor networks

-- Robotics

-- Robotic components

-- Robotic control

-- Robotic autonomy

-- External interfaces for robotics

-- Sensors and actuators

-- System on a chip

-- Embedded systems

-- Firmware

-- Embedded hardware

-- Embedded software

Real-time systems

-- Real-time operating systems

-- Real-time languages

-- Real-time system specification

-- Real-time system architecture

Dependable and fault-tolerant systems and networks

-- Reliability

-- Availability

-- Maintainability and maintenance

-- Processors and memory architectures

-- Secondary storage organization

-- Redundancy

-- Fault-tolerant network topologies

## Networks

Network architectures

-- Network design principles

-- Layering

-- Naming and addressing

-- Programming interfaces

Network protocols

-- Network protocol design

-- Protocol correctness

-- Protocol testing and verification

-- Formal specifications

-- Link-layer protocols

-- Network layer protocols

-- Routing protocols

-- Signaling protocols

-- Transport protocols

-- Session protocols

-- Presentation protocols

-- Application layer protocols

-- Peer-to-peer protocols

-- OAM protocols

-- Time synchronization protocols

-- Network policy

-- Cross-layer protocols

-- Network File System (NFS) protocol

Network components

-- Intermediate nodes

-- Routers

-- Bridges and switches

-- Physical links

-- Repeaters

-- Middle boxes / network appliances

-- End nodes

-- Network adapters

-- Network servers

-- Wireless access points, base stations and infrastructure

-- Cognitive radios

-- Logical nodes

-- Network domains

Network algorithms

-- Data path algorithms

-- Packet classification

-- Deep packet inspection

-- Packet scheduling

-- Control path algorithms

-- Network resources allocation

-- Network control algorithms

-- Traffic engineering algorithms

-- Network design and planning algorithms

-- Network economics

Network performance evaluation

-- Network performance modeling

-- Network simulations

-- Network experimentation

-- Network performance analysis

-- Network measurement

Network properties

-- Network security

-- Security protocols

-- Web protocol security

-- Mobile and wireless security

-- Denial-of-service attacks

-- Firewalls

-- Network range

-- Short-range networks

-- Local area networks

-- Metropolitan area networks

-- Wide area networks

-- Very long-range networks

-- Network structure

-- Topology analysis and generation

-- Physical topologies

-- Logical / virtual topologies

-- Network topology types

-- Point-to-point networks

-- Bus networks

-- Star networks

-- Ring networks

---- Token ring networks

---- Fiber distributed data interface (FDDI)

-- Mesh networks

---- Wireless mesh networks

-- Hybrid networks

-- Network dynamics

-- Network reliability

-- Error detection and error correction

-- Network mobility

-- Network manageability

-- Network privacy and anonymity

Network services

-- Naming and addressing

-- Cloud computing

-- Location based services

-- Programmable networks

-- In-network processing

-- Network management

-- Network monitoring

Network types

-- Network on chip

-- Home networks

-- Storage area networks

-- Data center networks

-- Wired access networks

-- Cyber-physical networks

-- Sensor networks

-- Mobile networks

-- Overlay and other logical network structures

-- Peer-to-peer networks

-- World Wide Web (network structure)

-- Social media networks

-- Online social networks

-- Wireless access networks

-- Wireless local area networks

-- Wireless personal area networks

-- Ad hoc networks

-- Mobile ad hoc networks

-- Public Internet

-- Packet-switching networks

## Software and its engineering

Software organization and properties

-- Contextual software domains

-- E-commerce infrastructure

-- Software infrastructure

-- Interpreters

-- Middleware

---- Message oriented middleware

---- Reflective middleware

---- Embedded middleware

-- Virtual machines

-- Operating systems

-- File systems management

-- Memory management

---- Virtual memory

---- Main memory

---- Allocation / deallocation strategies

---- Garbage collection

---- Distributed memory

---- Secondary storage

-- Process management

---- Scheduling

---- Deadlocks

---- Multithreading

---- Multiprocessing / multiprogramming / multitasking

---- Monitors

---- Mutual exclusion

---- Concurrency control

---- Power management

---- Process synchronization

-- Communications management

---- Buffering

---- Input / output

---- Message passing

-- Virtual worlds software

-- Interactive games

-- Virtual worlds training simulations

-- Software system structures

-- Embedded software

-- Software architectures

-- n-tier architectures

-- Peer-to-peer architectures

-- Data flow architectures

-- Cooperating communicating processes

-- Layered systems

-- Publish-subscribe / event-based architectures

-- Electronic blackboards

-- Simulator / interpreter

-- Object oriented architectures

-- Tightly coupled architectures

-- Space-based architectures

-- 3-tier architectures

-- Software system models

-- Petri nets

-- State systems

-- Entity relationship modeling

-- Model-driven software engineering

-- Feature interaction

-- Massively parallel systems

-- Ultra-large-scale systems

-- Distributed systems organizing principles

-- Cloud computing

-- Client-server architectures

-- Grid computing

-- Organizing principles for web applications

-- Real-time systems software

-- Abstraction, modeling and modularity

**-- Software functional properties**

**-- Correctness**

-- Synchronization

-- Functionality

-- Real-time schedulability

-- Consistency

-- Completeness

-- Access protection

**-- Formal methods**

-- Model checking

-- Software verification

-- Automated static analysis

-- Dynamic analysis

-- Extra-functional properties

-- Interoperability

-- Software performance

-- Software reliability

-- Software fault tolerance

-- Checkpoint / restart

-- Software safety

-- Software usability

Software notations and tools

-- General programming languages

**-- Language types**

-- Parallel programming languages

-- Distributed programming languages

-- Imperative languages

-- Object oriented languages

-- Functional languages

-- Concurrent programming languages

-- Constraint and logic languages

-- Data flow languages

-- Extensible languages

-- Assembly languages

-- Multiparadigm languages

-- Very high level languages

**-- Language features**

-- Abstract data types

-- Polymorphism

-- Inheritance

-- Control structures

-- Data types and structures

-- Classes and objects

-- Modules / packages

-- Constraints

-- Recursion

-- Concurrent programming structures

-- Procedures, functions and subroutines

-- Patterns

-- Coroutines

-- Frameworks

**-- Formal language definitions**

-- Syntax

-- Semantics

-- Compilers

-- Interpreters

-- Incremental compilers

-- Retargetable compilers

-- Just-in-time compilers

-- Dynamic compilers

-- Translator writing systems and compiler generators

-- Source code generation

-- Runtime environments

-- Preprocessors

-- Parsers

-- Context specific languages

-- Markup languages

-- Extensible Markup Language (XML)

-- Hypertext languages

-- Scripting languages

-- Domain specific languages

-- Specialized application languages

-- API languages

-- Graphical user interface languages

-- Window managers

-- Command and control languages

-- Macro languages

-- Programming by example

-- State based definitions

-- Visual languages

-- Interface definition languages

-- System description languages

-- Design languages

-- Unified Modeling Language (UML)

-- Architecture description languages

-- System modeling languages

-- Orchestration languages

-- Integration frameworks

-- Specification languages

-- Development frameworks and environments

-- Object oriented frameworks

-- Software as a service orchestration systems

-- Integrated and visual development environments

-- Application specific development environments

-- Software configuration management and version control systems

-- Software libraries and repositories

-- Software maintenance tools

Software creation and management

-- Designing software

-- Requirements analysis

-- Software design engineering

-- Software design tradeoffs

-- Software implementation planning

-- Software design techniques

-- Software development process management

-- Software development methods

-- Rapid application development

-- Agile software development

-- Capability Maturity Model

-- Waterfall model

-- Spiral model

-- V-model

-- Design patterns

-- Risk management

-- Software development techniques

-- Software prototyping

-- Object oriented development

-- Flowcharts

-- Reusability

-- Software product lines

-- Error handling and recovery

-- Software verification and validation

-- Software prototyping

-- Operational analysis

-- Software defect analysis

-- Software testing and debugging

-- Fault tree analysis

-- Process validation

-- Walkthroughs

-- Pair programming

-- Use cases

-- Acceptance testing

-- Traceability

**-- Formal software verification**

-- Empirical software validation

-- Software post-development issues

-- Software reverse engineering

-- Documentation

-- Backup procedures

-- Software evolution

-- Software version control

-- Maintaining software

-- System administration

-- Collaboration in software development

-- Open source model

-- Programming teams

## Theory of computation

**Models of computation**

-- Computability

-- Lambda calculus

-- Turing machines

-- Recursive functions

-- Probabilistic computation

-- Quantum computation theory

-- Quantum complexity theory

-- Quantum communication complexity

-- Quantum query complexity

-- Quantum information theory

-- Interactive computation

-- Streaming models

-- Concurrency

-- Parallel computing models

-- Distributed computing models

-- Process calculi

-- Timed and hybrid models

-- Abstract machines

**Formal languages and automata theory**

**-- Formalisms**

-- Algebraic language theory

-- Rewrite systems

-- Automata over infinite objects

-- Grammars and context-free languages

-- Tree languages

**-- Automata extensions**

-- Transducers

-- Quantitative automata

**-- Regular languages**

**Computational complexity and cryptography**

-- Complexity classes

-- Problems, reductions and completeness

-- Communication complexity

-- Circuit complexity

-- Oracles and decision trees

-- Algebraic complexity theory

-- Quantum complexity theory

-- Proof complexity

-- Interactive proof systems

-- Complexity theory and logic

-- Cryptographic primitives

-- Cryptographic protocols

**Logic**

-- Logic and verification

-- Proof theory

-- Modal and temporal logics

-- Automated reasoning

-- Constraint and logic programming

-- Constructive mathematics

-- Description logics

-- Equational logic and rewriting

-- Finite Model Theory

-- Higher order logic

-- Linear logic

-- Programming logic

-- Abstraction

-- Verification by model checking

-- Type theory

-- Hoare logic

-- Separation logic

**Design and analysis of algorithms**

-- Graph algorithms analysis

-- Network flows

-- Sparsification and spanners

-- Shortest paths

-- Dynamic graph algorithms

-- Approximation algorithms analysis

-- Scheduling algorithms

-- Packing and covering problems

-- Routing and network design problems

-- Facility location and clustering

-- Rounding techniques

-- Stochastic approximation

-- Numeric approximation algorithms

-- Mathematical optimization

-- Discrete optimization

-- Network optimization

-- Continuous optimization

-- Linear programming

-- Semidefinite programming

-- Convex optimization

-- Quasiconvex programming and unimodality

-- Stochastic control and optimization

-- Quadratic programming

-- Nonconvex optimization

-- Mixed discrete-continuous optimization

-- Submodular optimization and polymatroids

-- Integer programming

-- Data structures design and analysis

-- Data compression

-- Pattern matching

-- Sorting and searching

-- Predecessor queries

-- Cell probe models and lower bounds

-- Online algorithms

-- Online learning algorithms

-- Scheduling algorithms

-- Caching and paging algorithms

-- K-server algorithms

-- Adversary models

-- Parameterized complexity and exact algorithms

-- Fixed parameter tractability

-- W hierarchy

-- Streaming, sublinear and near linear time algorithms

-- Bloom filters and hashing

-- Sketching and sampling

-- Lower bounds and information complexity

-- Random order and robust communication complexity

-- Nearest neighbor algorithms

-- Parallel algorithms

-- MapReduce algorithms

-- Self-organization

-- Shared memory algorithms

-- Vector / streaming algorithms

-- Massively parallel algorithms

-- Distributed algorithms

-- MapReduce algorithms

-- Self-organization

-- Algorithm design techniques

-- Backtracking

-- Branch-and-bound

-- Divide and conquer

-- Dynamic programming

-- Preconditioning

-- Concurrent algorithms

**Randomness, geometry and discrete structures**

-- Pseudorandomness and derandomization

-- Computational geometry

-- Generating random combinatorial structures

-- Random walks and Markov chains

-- Expander graphs and randomness extractors

-- Error-correcting codes

-- Random projections and metric embeddings

-- Random network models

**Theory and algorithms for application domains**

-- Machine learning theory

-- Sample complexity and generalization bounds

-- Boolean function learning

-- Unsupervised learning and clustering

-- Kernel methods

-- Support vector machines

-- Gaussian processes

-- Boosting

-- Bayesian analysis

-- Inductive inference

-- Online learning theory

-- Multi-agent learning

-- Models of learning

-- Query learning

-- Structured prediction

-- Reinforcement learning

-- Sequential decision making

-- Inverse reinforcement learning

-- Apprenticeship learning

-- Multi-agent reinforcement learning

-- Adversarial learning

-- Active learning

-- Semi-supervised learning

-- Markov decision processes

-- Regret bounds

-- Algorithmic game theory and mechanism design

-- Social networks

-- Algorithmic game theory

-- Algorithmic mechanism design

-- Solution concepts in game theory

-- Exact and approximate computation of equilibria

-- Quality of equilibria

-- Convergence and learning in games

-- Market equilibria

-- Computational pricing and auctions

-- Representations of games and their complexity

-- Network games

-- Network formation

-- Computational advertising theory

-- Database theory

-- Data exchange

-- Data provenance

-- Data modeling

-- Database query languages (principles)

-- Database constraints theory

-- Database interoperability

-- Data structures and algorithms for data management

-- Database query processing and optimization (theory)

-- Data integration

-- Logic and databases

-- Theory of database privacy and security

-- Incomplete, inconsistent, and uncertain databases

Semantics and reasoning

-- Program constructs

-- Control primitives

-- Functional constructs

-- Object oriented constructs

-- Program schemes

-- Type structures

**-- Program semantics**

-- Algebraic semantics

-- Denotational semantics

-- Operational semantics

-- Axiomatic semantics

-- Action semantics

-- Categorical semantics

**-- Program reasoning**

-- Invariants

-- Program specifications

-- Pre- and post-conditions

-- Program verification

-- Program analysis

-- Assertions

-- Parsing

-- Abstraction

## Mathematics of computing

Discrete mathematics

-- Combinatorics

-- Combinatoric problems

-- Permutations and combinations

-- Combinatorial algorithms

-- Generating functions

-- Combinatorial optimization

-- Combinatorics on words

-- Enumeration

-- Graph theory

-- Trees

-- Hypergraphs

-- Random graphs

-- Graph coloring

-- Paths and connectivity problems

-- Graph enumeration

-- Matchings and factors

-- Graphs and surfaces

-- Network flows

-- Spectra of graphs

-- Extremal graph theory

-- Matroids and greedoids

-- Graph algorithms

-- Approximation algorithms

Probability and statistics

-- Probabilistic representations

-- Bayesian networks

-- Markov networks

-- Factor graphs

-- Decision diagrams

-- Equational models

-- Causal networks

-- Stochastic differential equations

-- Nonparametric representations

-- Kernel density estimators

-- Spline models

-- Bayesian nonparametric models

-- Probabilistic inference problems

-- Maximum likelihood estimation

-- Bayesian computation

-- Computing most probable explanation

-- Hypothesis testing and confidence interval computation

-- Density estimation

-- Quantile regression

-- Max marginal computation

-- Probabilistic reasoning algorithms

-- Variable elimination

-- Loopy belief propagation

-- Variational methods

-- Expectation maximization

-- Markov-chain Monte Carlo methods

-- Gibbs sampling

-- Metropolis-Hastings algorithm

-- Simulated annealing

-- Markov-chain Monte Carlo convergence measures

-- Sequential Monte Carlo methods

-- Kalman filters and hidden Markov models

-- Resampling methods

-- Bootstrapping

-- Jackknifing

-- Random number generation

-- Probabilistic algorithms

-- Statistical paradigms

-- Queueing theory

-- Contingency table analysis

-- Regression analysis

-- Robust regression

-- Time series analysis

-- Survival analysis

-- Renewal theory

-- Dimensionality reduction

-- Cluster analysis

-- Statistical graphics

-- Exploratory data analysis

-- Stochastic processes

-- Markov processes

-- Nonparametric statistics

-- Distribution functions

-- Multivariate statistics

**Mathematical software**

-- Solvers

-- Statistical software

-- Mathematical software performance

**Information theory**

-- Coding theory

**Mathematical analysis**

-- Numerical analysis

-- Computation of transforms

-- Computations in finite fields

-- Computations on matrices

-- Computations on polynomials

-- Gröbner bases and other special bases

-- Number-theoretic computations

-- Interpolation

-- Numerical differentiation

-- Interval arithmetic

-- Arbitrary-precision arithmetic

-- Automatic differentiation

-- Mesh generation

-- Discretization

-- Mathematical optimization

-- Discrete optimization

-- Network optimization

-- Continuous optimization

-- Linear programming

-- Semidefinite programming

-- Convex optimization

-- Quasiconvex programming and unimodality

-- Stochastic control and optimization

-- Quadratic programming

-- Nonconvex optimization

-- Mixed discrete-continuous optimization

-- Submodular optimization and polymatroids

-- Integer programming

-- Differential equations

-- Ordinary differential equations

-- Partial differential equations

-- Differential algebraic equations

-- Differential variational inequalities

-- Calculus

-- Lambda calculus

-- Differential calculus

-- Integral calculus

-- Functional analysis

-- Approximation

-- Integral equations

-- Nonlinear equations

-- Quadrature

**Continuous mathematics**

-- Calculus

-- Lambda calculus

-- Differential calculus

-- Integral calculus

-- Topology

-- Point-set topology

-- Algebraic topology

-- Geometric topology

-- Continuous functions

## Information systems

**Data management systems**

-- Database design and models

-- Relational database model

-- Entity relationship models

-- Graph-based database models

-- Hierarchical data models

-- Network data models

-- Physical data models

-- Data model extensions

-- Semi-structured data

-- Data streams

-- Data provenance

-- Incomplete data

-- Temporal data

-- Uncertainty

-- Inconsistent data

-- Data structures

-- Data access methods

-- Multidimensional range search

-- Data scans

-- Point lookups

-- Unidimensional range search

-- Proximity search

-- Data layout

-- Data compression

-- Data encryption

-- Record and block layout

-- Database management system engines

-- DBMS engine architectures

-- Database query processing

-- Query optimization

-- Query operators

-- Query planning

-- Join algorithms

-- Database transaction processing

-- Data locking

-- Transaction logging

-- Database recovery

-- Record and buffer management

-- Parallel and distributed DBMSs

-- Key-value stores

-- MapReduce-based systems

-- Relational parallel and distributed DBMSs

-- Triggers and rules

-- Database views

-- Integrity checking

-- Distributed database transactions

-- Distributed data locking

-- Deadlocks

-- Distributed database recovery

-- Main memory engines

-- Online analytical processing engines

-- Stream management

-- Query languages

-- Relational database query languages

-- Structured Query Language

-- XML query languages

-- XPath

-- XQuery

-- Query languages for non-relational engines

-- MapReduce languages

-- Call level interfaces

-- Database administration

-- Database utilities and tools

-- Database performance evaluation

-- Autonomous database administration

-- Data dictionaries

-- Information integration

-- Deduplication

-- Extraction, transformation and loading

-- Data exchange

-- Data cleaning

-- Wrappers (data mining)

-- Mediators and data integration

-- Entity resolution

-- Data warehouses

-- Federated databases

-- Middleware for databases

-- Database web servers

-- Application servers

-- Object-relational mapping facilities

-- Data federation tools

-- Data replication tools

-- Distributed transaction monitors

-- Message queues

-- Service buses

-- Enterprise application integration tools

-- Middleware business process managers

Information storage systems

-- Information storage technologies

-- Magnetic disks

-- Magnetic tapes

-- Optical / magneto-optical disks

-- Storage class memory

-- Flash memory

-- Phase change memory

-- Disk arrays

-- Tape libraries

-- Record storage systems

-- Record storage alternatives

-- Heap (data structure)

-- Hashed file organization

-- Indexed file organization

-- Linked lists

-- Directory structures

-- B-trees

-- Vnodes

-- Inodes

-- Extent-based file structures

-- Block / page strategies

-- Slotted pages

-- Intrapage space management

-- Interpage free-space management

-- Record layout alternatives

-- Fixed length attributes

-- Variable length attributes

-- Null values in records

-- Relational storage

-- Horizontal partitioning

-- Vertical partitioning

-- Column based storage

-- Hybrid storage layouts

-- Compression strategies

-- Storage replication

-- Mirroring

-- RAID

-- Point-in-time copies

-- Remote replication

-- Storage recovery strategies

-- Storage architectures

-- Cloud based storage

-- Storage network architectures

-- Storage area networks

-- Direct attached storage

-- Network attached storage

-- Distributed storage

-- Storage management

-- Hierarchical storage management

-- Storage virtualization

-- Information lifecycle management

-- Version management

-- Storage power management

-- Thin provisioning

Information systems applications

-- Enterprise information systems

-- Intranets

-- Extranets

-- Enterprise resource planning

-- Enterprise applications

-- Data centers

-- Collaborative and social computing systems and tools

-- Blogs

-- Wikis

-- Reputation systems

-- Open source software

-- Social networking sites

-- Social tagging systems

-- Synchronous editors

-- Asynchronous editors

-- Spatial-temporal systems

-- Location based services

-- Geographic information systems

-- Sensor networks

-- Data streaming

-- Global positioning systems

-- Decision support systems

-- Data warehouses

-- Expert systems

-- Data analytics

-- Online analytical processing

-- Mobile information processing systems

-- Process control systems

-- Multimedia information systems

-- Multimedia databases

-- Multimedia streaming

-- Multimedia content creation

-- Massively multiplayer online games

-- Data mining

-- Data cleaning

-- Collaborative filtering

-- Association rules

-- Clustering

-- Nearest-neighbor search

-- Data stream mining

-- Digital libraries and archives

-- Computational advertising

-- Computing platforms

World Wide Web

-- Web searching and information discovery

-- Web search engines

-- Web crawling

-- Web indexing

-- Page and site ranking

-- Spam detection

-- Content ranking

-- Collaborative filtering

-- Social recommendation

-- Personalization

-- Social tagging

-- Online advertising

-- Sponsored search advertising

-- Content match advertising

-- Display advertising

-- Social advertising

-- Web mining

-- Site wrapping

-- Data extraction and integration

-- Deep web

-- Surfacing

-- Search results deduplication

-- Web log analysis

-- Traffic analysis

-- Web applications

-- Internet communications tools

-- Email

-- Blogs

-- Texting

-- Chat

-- Web conferencing

-- Social networks

-- Crowdsourcing

-- Answer ranking

-- Trust

-- Incentive schemes

-- Reputation systems

-- Electronic commerce

-- Digital cash

-- E-commerce infrastructure

-- Electronic data interchange

-- Electronic funds transfer

-- Online shopping

-- Online banking

-- Secure online transactions

-- Online auctions

-- Web interfaces

-- Wikis

-- Browsers

-- Mashups

-- Web services

-- Simple Object Access Protocol (SOAP)

-- RESTful web services

-- Web Services Description Language (WSDL)

-- Universal Description Discovery and Integration (UDDI)

-- Service discovery and interfaces

-- Web data description languages

-- Semantic web description languages

-- Resource Description Framework (RDF)

-- Web Ontology Language (OWL)

-- Markup languages

-- Extensible Markup Language (XML)

-- Hypertext languages

Information retrieval

-- Document representation

-- Document structure

-- Document topic models

-- Content analysis and feature selection

-- Data encoding and canonicalization

-- Document collection models

-- Ontologies

-- Dictionaries

-- Thesauri

-- Information retrieval query processing

-- Query representation

-- Query intent

-- Query log analysis

-- Query suggestion

-- Query reformulation

-- Users and interactive retrieval

-- Personalization

-- Task models

-- Search interfaces

-- Collaborative search

-- Retrieval models and ranking

-- Rank aggregation

-- Probabilistic retrieval models

-- Language models

-- Similarity measures

-- Learning to rank

-- Combination, fusion and federated search

-- Information retrieval diversity

-- Top-k retrieval in databases

-- Novelty in information retrieval

-- Retrieval tasks and goals

-- Question answering

-- Document filtering

-- Recommender systems

-- Information extraction

-- Sentiment analysis

-- Expert search

-- Near-duplicate and plagiarism detection

-- Clustering and classification

-- Summarization

-- Business intelligence

-- Evaluation of retrieval results

-- Test collections

-- Relevance assessment

-- Retrieval effectiveness

-- Retrieval efficiency

-- Presentation of retrieval results

-- Search engine architectures and scalability

-- Search engine indexing

-- Search index compression

-- Distributed retrieval

-- Peer-to-peer retrieval

-- Retrieval on mobile devices

-- Adversarial retrieval

-- Link and co-citation analysis

-- Searching with auxiliary databases

-- Specialized information retrieval

-- Structure and multilingual text search

-- Structured text search

-- Mathematics retrieval

-- Chemical and biochemical retrieval

-- Multilingual and cross-lingual retrieval

-- Multimedia and multimodal retrieval

-- Image search

-- Video search

-- Speech / audio search

-- Music retrieval

-- Environment-specific retrieval

-- Enterprise search

-- Desktop search

-- Web and social media search

## Security and privacy

Cryptography

-- Key management

-- Public key (asymmetric) techniques

-- Digital signatures

-- Public key encryption

-- Symmetric cryptography and hash functions

-- Block and stream ciphers

-- Hash functions and message authentication codes

-- Cryptanalysis and other attacks

-- Information-theoretic techniques

-- Mathematical foundations of cryptography

Formal methods and theory of security

-- Trust frameworks

-- Security requirements

-- Formal security models

-- Logic and verification

Security services

-- Authentication

-- Biometrics

-- Graphical / visual passwords

-- Multi-factor authentication

-- Access control

-- Pseudonymity, anonymity and untraceability

-- Privacy-preserving protocols

-- Digital rights management

-- Authorization

Intrusion/anomaly detection and malware mitigation

-- Malware and its mitigation

-- Intrusion detection systems

-- Social engineering attacks

-- Spoofing attacks

-- Phishing

Security in hardware

-- Tamper-proof and tamper-resistant designs

-- Embedded systems security

-- Hardware security implementation

-- Hardware-based security protocols

-- Hardware attacks and countermeasures

-- Malicious design modifications

-- Side-channel analysis and countermeasures

-- Hardware reverse engineering

Systems security

-- Operating systems security

-- Mobile platform security

-- Trusted computing

-- Virtualization and security

-- Browser security

-- Distributed systems security

-- Information flow control

-- Denial-of-service attacks

-- Firewalls

-- Vulnerability management

-- Penetration testing

-- Vulnerability scanners

-- File system security

Network security

-- Security protocols

-- Web protocol security

-- Mobile and wireless security

-- Denial-of-service attacks

-- Firewalls

Database and storage security

-- Data anonymization and sanitization

-- Management and querying of encrypted data

-- Information accountability and usage control

-- Database activity monitoring

Software and application security

-- Software security engineering

-- Web application security

-- Social network security and privacy

-- Domain-specific security and privacy architectures

-- Software reverse engineering

Human and societal aspects of security and privacy

-- Economics of security and privacy

-- Social aspects of security and privacy

-- Privacy protections

-- Usability in security and privacy

## Human-centered computing

Human computer interaction (HCI)

-- HCI design and evaluation methods

-- User models

-- User studies

-- Usability testing

-- Heuristic evaluations

-- Walkthrough evaluations

-- Laboratory experiments

-- Field studies

-- Interaction paradigms

-- Hypertext / hypermedia

-- Mixed / augmented reality

-- Command line interfaces

-- Graphical user interfaces

-- Virtual reality

-- Web-based interaction

-- Natural language interfaces

-- Collaborative interaction

-- Interaction devices

-- Graphics input devices

-- Displays and imagers

-- Sound-based input / output

-- Keyboards

-- Pointing devices

-- Touch screens

-- Haptic devices

-- HCI theory, concepts and models

-- Interaction techniques

-- Auditory feedback

-- Text input

-- Pointing

-- Gestural input

-- Interactive systems and tools

-- User interface management systems

-- User interface programming

-- User interface toolkits

-- Empirical studies in HCI

Interaction design

-- Interaction design process and methods

-- User interface design

-- User centered design

-- Activity centered design

-- Scenario-based design

-- Participatory design

-- Contextual design

-- Interface design prototyping

-- Interaction design theory, concepts and paradigms

-- Empirical studies in interaction design

-- Systems and tools for interaction design

-- Wireframes

Collaborative and social computing

-- Collaborative and social computing theory, concepts and paradigms

-- Social content sharing

-- Collaborative content creation

-- Collaborative filtering

-- Social recommendation

-- Social networks

-- Social tagging

-- Computer supported cooperative work

-- Social engineering (social sciences)

-- Social navigation

-- Social media

-- Collaborative and social computing design and evaluation methods

-- Social network analysis

-- Ethnographic studies

-- Collaborative and social computing systems and tools

-- Blogs

-- Wikis

-- Reputation systems

-- Open source software

-- Social networking sites

-- Social tagging systems

-- Synchronous editors

-- Asynchronous editors

-- Empirical studies in collaborative and social computing

-- Collaborative and social computing devices

Ubiquitous and mobile computing

-- Ubiquitous and mobile computing theory, concepts and paradigms

-- Ubiquitous computing

-- Mobile computing

-- Ambient intelligence

-- Ubiquitous and mobile computing systems and tools

-- Ubiquitous and mobile devices

-- Smartphones

-- Interactive whiteboards

-- Mobile phones

-- Mobile devices

-- Portable media players

-- Personal digital assistants

-- Handheld game consoles

-- E-book readers

-- Tablet computers

-- Ubiquitous and mobile computing design and evaluation methods

-- Empirical studies in ubiquitous and mobile computing

Visualization

-- Visualization techniques

-- Treemaps

-- Hyperbolic trees

-- Heat maps

-- Graph drawings

-- Dendrograms

-- Cladograms

-- Visualization application domains

-- Scientific visualization

-- Visual analytics

-- Geographic visualization

-- Information visualization

-- Visualization systems and tools

-- Visualization toolkits

-- Visualization theory, concepts and paradigms

-- Empirical studies in visualization

-- Visualization design and evaluation methods

Accessibility

-- Accessibility theory, concepts and paradigms

-- Empirical studies in accessibility

-- Accessibility design and evaluation methods

-- Accessibility technologies

-- Accessibility systems and tools

## Computing methodologies

Symbolic and algebraic manipulation

-- Symbolic and algebraic algorithms

-- Combinatorial algorithms

-- Algebraic algorithms

-- Nonalgebraic algorithms

-- Symbolic calculus algorithms

-- Exact arithmetic algorithms

-- Hybrid symbolic-numeric methods

-- Discrete calculus algorithms

-- Number theory algorithms

-- Equation and inequality solving algorithms

-- Linear algebra algorithms

-- Theorem proving algorithms

-- Boolean algebra algorithms

-- Optimization algorithms

-- Computer algebra systems

-- Special-purpose algebraic systems

-- Representation of mathematical objects

-- Representation of exact numbers

-- Representation of mathematical functions

-- Representation of Boolean functions

-- Representation of polynomials

Parallel computing methodologies

-- Parallel algorithms

-- MapReduce algorithms

-- Self-organization

-- Shared memory algorithms

-- Vector / streaming algorithms

-- Massively parallel algorithms

-- Parallel programming languages

Artificial intelligence

-- Natural language processing

-- Information extraction

-- Machine translation

-- Discourse, dialogue and pragmatics

-- Natural language generation

-- Speech recognition

-- Lexical semantics

-- Phonology / morphology

-- Language resources

-- Knowledge representation and reasoning

-- Description logics

-- Semantic networks

-- Nonmonotonic, default reasoning and belief revision

-- Probabilistic reasoning

-- Vagueness and fuzzy logic

-- Causal reasoning and diagnostics

-- Temporal reasoning

-- Cognitive robotics

-- Ontology engineering

-- Logic programming and answer set programming

-- Spatial and physical reasoning

-- Reasoning about belief and knowledge

-- Planning and scheduling

-- Planning for deterministic actions

-- Planning under uncertainty

-- Multi-agent planning

-- Planning with abstraction and generalization

-- Robotic planning

-- Search methodologies

-- Heuristic function construction

-- Discrete space search

-- Continuous space search

-- Randomized search

-- Game tree search

-- Abstraction and micro-operators

-- Search with partial observations

-- Control methods

-- Robotic planning

-- Computational control theory

-- Motion path planning

-- Philosophical/theoretical foundations of artificial intelligence

-- Cognitive science

-- Theory of mind

-- Distributed artificial intelligence

-- Multi-agent systems

-- Intelligent agents

-- Mobile agents

-- Cooperation and coordination

-- Computer vision

-- Computer vision tasks

-- Biometrics

-- Scene understanding

-- Activity recognition and understanding

-- Video summarization

-- Visual content-based indexing and retrieval

-- Visual inspection

-- Vision for robotics

-- Scene anomaly detection

-- Image and video acquisition

-- Camera calibration

-- Epipolar geometry

-- Computational photography

-- Hyperspectral imaging

-- Motion capture

-- 3D imaging

-- Active vision

-- Computer vision representations

-- Image representations

-- Shape representations

-- Appearance and texture representations

-- Hierarchical representations

-- Computer vision problems

-- Interest point and salient region detections

-- Image segmentation

-- Video segmentation

-- Shape inference

-- Object detection

-- Object recognition

-- Object identification

-- Tracking

-- Reconstruction

-- Matching

Machine learning

-- Learning paradigms

-- Supervised learning

-- Ranking

-- Learning to rank

-- Supervised learning by classification

-- Supervised learning by regression

-- Structured outputs

-- Cost-sensitive learning

-- Unsupervised learning

-- Cluster analysis

-- Anomaly detection

-- Mixture modeling

-- Topic modeling

-- Source separation

-- Motif discovery

-- Dimensionality reduction and manifold learning

-- Reinforcement learning

-- Sequential decision making

-- Inverse reinforcement learning

-- Apprenticeship learning

-- Multi-agent reinforcement learning

-- Adversarial learning

-- Multi-task learning

-- Transfer learning

-- Lifelong machine learning

-- Learning under covariate shift

-- Learning settings

-- Batch learning

-- Online learning settings

-- Learning from demonstrations

-- Learning from critiques

-- Learning from implicit feedback

-- Active learning settings

-- Semi-supervised learning settings

-- Machine learning approaches

-- Classification and regression trees

-- Kernel methods

-- Support vector machines

-- Gaussian processes

-- Neural networks

-- Logical and relational learning

-- Inductive logic learning

-- Statistical relational learning

-- Learning in probabilistic graphical models

-- Maximum likelihood modeling

-- Maximum entropy modeling

-- Maximum a posteriori modeling

-- Mixture models

-- Latent variable models

-- Bayesian network models

-- Learning linear models

-- Perceptron algorithm

-- Factorization methods

-- Non-negative matrix factorization

-- Factor analysis

-- Principal component analysis

-- Canonical correlation analysis

-- Latent Dirichlet allocation

-- Rule learning

-- Instance-based learning

-- Markov decision processes

-- Partially-observable Markov decision processes

-- Stochastic games

-- Learning latent representations

-- Deep belief networks

-- Machine learning algorithms

-- Dynamic programming for Markov decision processes

-- Value iteration

-- Q-learning

-- Policy iteration

-- Temporal difference learning

-- Approximate dynamic programming methods

-- Ensemble methods

-- Boosting

-- Bagging

-- Spectral methods

-- Feature selection

-- Regularization

-- Cross-validation

Modeling and simulation

-- Model development and analysis

-- Modeling methodologies

-- Model verification and validation

-- Uncertainty quantification

-- Simulation theory

-- Systems theory

-- Network science

-- Simulation types and techniques

-- Uncertainty quantification

-- Quantum mechanic simulation

-- Molecular simulation

-- Rare-event simulation

-- Discrete-event simulation

-- Agent / discrete models

-- Distributed simulation

-- Continuous simulation

-- Continuous models

-- Real-time simulation

-- Interactive simulation

-- Multiscale systems

-- Massively parallel and high-performance simulations

-- Data assimilation

-- Scientific visualization

-- Visual analytics

-- Simulation by animation

-- Simulation support systems

-- Simulation environments

-- Simulation languages

-- Simulation tools

-- Simulation evaluation

Computer graphics

-- Animation

-- Motion capture

-- Procedural animation

-- Physical simulation

-- Motion processing

-- Collision detection

-- Rendering

-- Rasterization

-- Ray tracing

-- Non-photorealistic rendering

-- Reflectance modeling

-- Visibility

-- Image manipulation

-- Computational photography

-- Image processing

-- Texturing

-- Image-based rendering

-- Antialiasing

-- Graphics systems and interfaces

-- Graphics processors

-- Graphics input devices

-- Mixed / augmented reality

-- Perception

-- Graphics file formats

-- Virtual reality

-- Image compression

-- Shape modeling

-- Mesh models

-- Mesh geometry models

-- Parametric curve and surface models

-- Point-based models

-- Volumetric models

-- Shape analysis

Distributed computing methodologies

-- Distributed algorithms

-- MapReduce algorithms

-- Self-organization

-- Distributed programming languages

Concurrent computing methodologies

-- Concurrent programming languages

-- Concurrent algorithms

## Applied computing

Electronic commerce

-- Digital cash

-- E-commerce infrastructure

-- Electronic data interchange

-- Electronic funds transfer

-- Online shopping

-- Online banking

-- Secure online transactions

-- Online auctions

Enterprise computing

-- Enterprise information systems

-- Intranets

-- Extranets

-- Enterprise resource planning

-- Enterprise applications

-- Data centers

-- Business process management

-- Business process modeling

-- Business process management systems

-- Business process monitoring

-- Cross-organizational business processes

-- Business intelligence

-- Enterprise architectures

-- Enterprise architecture management

-- Enterprise architecture frameworks

-- Enterprise architecture modeling

-- Service-oriented architectures

-- Event-driven architectures

-- Business rules

-- Enterprise modeling

-- Enterprise ontologies, taxonomies and vocabularies

-- Enterprise data management

-- Reference models

-- Business-IT alignment

-- IT architectures

-- IT governance

-- Enterprise computing infrastructures

-- Enterprise interoperability

-- Enterprise application integration

-- Information integration and interoperability

Physical sciences and engineering

-- Aerospace

-- Avionics

-- Archaeology

-- Astronomy

-- Chemistry

-- Earth and atmospheric sciences

-- Environmental sciences

-- Engineering

-- Computer-aided design

-- Physics

-- Mathematics and statistics

-- Electronics

-- Avionics

-- Telecommunications

-- Internet telephony

Life and medical sciences

-- Computational biology

-- Molecular sequence analysis

-- Recognition of genes and regulatory elements

-- Molecular evolution

-- Computational transcriptomics

-- Biological networks

-- Sequencing and genotyping technologies

-- Imaging

-- Computational proteomics

-- Molecular structural biology

-- Computational genomics

-- Genomics

-- Computational genomics

-- Systems biology

-- Consumer health

-- Health care information systems

-- Health informatics

-- Bioinformatics

-- Metabolomics / metabonomics

-- Genetics

-- Population genetics

-- Proteomics

-- Computational proteomics

-- Transcriptomics

Law, social and behavioral sciences

-- Anthropology

-- Ethnography

-- Law

-- Psychology

-- Economics

-- Sociology

Computer forensics

-- Surveillance mechanisms

-- Investigation techniques

-- Evidence collection, storage and analysis

-- Network forensics

-- System forensics

-- Data recovery

Arts and humanities

-- Fine arts

-- Performing arts

-- Architecture (buildings)

-- Computer-aided design

-- Language translation

-- Media arts

-- Sound and music computing

Computers in other domains

-- Digital libraries and archives

-- Publishing

-- Military

-- Cyberwarfare

-- Cartography

-- Agriculture

-- Computing in government

-- Voting / election technologies

-- E-government

-- Personal computers and PC applications

-- Word processors

-- Spreadsheets

-- Computer games

-- Microcomputers

Operations research

-- Consumer products

-- Industry and manufacturing

-- Supply chain management

-- Command and control

-- Computer-aided manufacturing

-- Decision analysis

-- Transportation

-- Forecasting

-- Marketing

Education

-- Digital libraries and archives

-- Computer-assisted instruction

-- Interactive learning environments

-- Collaborative learning

-- Learning management systems

-- Distance learning

-- E-learning

-- Computer-managed instruction

Document management and text processing

-- Document searching

-- Document management

-- Text editing

-- Version control

-- Document metadata

-- Document capture

-- Document analysis

-- Document scanning

-- Graphics recognition and interpretation

-- Optical character recognition

-- Online handwriting recognition

-- Document preparation

-- Markup languages

-- Extensible Markup Language (XML)

-- Hypertext languages

-- Annotation

-- Format and notation

-- Multi / mixed media creation

-- Image composition

-- Hypertext / hypermedia creation

-- Document scripting languages

## Social and professional topics

Professional topics

-- Computing industry

-- Industry statistics

-- Computer manufacturing

-- Sustainability

-- Management of computing and information systems

-- Project and people management

-- Project management techniques

-- Project staffing

-- Systems planning

-- Systems analysis and design

-- Systems development

-- Computer and information systems training

-- Implementation management

-- Hardware selection

-- Computing equipment management

-- Pricing and resource allocation

-- Software management

-- Software maintenance

-- Software selection and adaptation

-- System management

-- Centralization / decentralization

-- Technology audits

-- Quality assurance

-- Network operations

-- File systems management

-- Information system economics

-- History of computing

-- Historical people

-- History of hardware

-- History of software

-- History of programming languages

-- History of computing theory

-- Computing education

-- Computational thinking

-- Accreditation

-- Model curricula

-- Computing education programs

-- Information systems education

-- Computer science education

---- CS1

-- Computer engineering education

-- Information technology education

-- Information science education

-- Computational science and engineering education

-- Software engineering education

-- Informal education

-- Computing literacy

-- Student assessment

-- K-12 education

-- Adult education

-- Computing and business

-- Employment issues

-- Automation

-- Computer supported cooperative work

-- Economic impact

-- Offshoring

-- Reengineering

-- Socio-technical systems

-- Computing profession

-- Codes of ethics

-- Employment issues

-- Funding

-- Computing occupations

-- Computing organizations

-- Testing, certification and licensing

-- Assistive technologies

Computing / technology policy

-- Intellectual property

-- Digital rights management

-- Copyrights

-- Software reverse engineering

-- Patents

-- Trademarks

-- Internet governance / domain names

-- Licensing

-- Treaties

-- Database protection laws

-- Secondary liability

-- Soft intellectual property

-- Hardware reverse engineering

-- Privacy policies

-- Censorship

-- Pornography

-- Hate speech

-- Political speech

-- Technology and censorship

-- Censoring filters

-- Surveillance

-- Governmental surveillance

-- Corporate surveillance

-- Commerce policy

-- Taxation

-- Transborder data flow

-- Antitrust and competition

-- Governmental regulations

-- Online auctions policy

-- Consumer products policy

-- Network access control

-- Censoring filters

-- Broadband access

-- Net neutrality

-- Network access restrictions

-- Age-based restrictions

-- Acceptable use policy restrictions

-- Universal access

-- Computer crime

-- Social engineering attacks

-- Spoofing attacks

-- Phishing

-- Identity theft

-- Financial crime

-- Malware / spyware crime

-- Government technology policy

-- Governmental regulations

-- Import / export controls

-- Medical information policy

-- Medical records

-- Personal health records

-- Genetic information

-- Patient privacy

-- Health information exchanges

-- Medical technologies

-- Remote medicine

User characteristics

-- Race and ethnicity

-- Religious orientation

-- Gender

-- Men

-- Women

-- Sexual orientation

-- People with disabilities

-- Geographic characteristics

-- Cultural characteristics

-- Age

-- Children

-- Seniors

-- Adolescents

## Proper nouns: People, technologies and companies

Companies

-- Accenture

-- Adobe Systems Incorporated

-- Advanced Information Systems

-- Agere Systems, Inc.

-- Agilent Technologies

-- Alcatel-Lucent

-- Bell Labs

-- AOL, Inc.

-- Apple, Inc.

-- AT&T

-- BAE Systems

-- BEA Systems, Inc.

-- Blizzard Entertainment

-- Blue Sky Studios

-- Borland Software Corporation

-- CA Technologies

-- Cable & Wireless Worldwide

-- Cadence Design Systems

-- China Telecom Corporation Limited

-- Cisco Systems, Inc.

-- Citrix Systems, Inc.

-- Commerce One

-- Compaq Computer Corporation

Corel Corporation

-- Dell Computer Corporation

-- DiamondCluster International, Inc.

-- Digital Equipment Corporation

eBay Inc.

-- EIS, Inc.

-- EMC Corporation

-- Ericsson

-- Ernst & Young

-- Forrester Research

-- Gartner Group

-- General Dynamics

-- General Electric

-- Google Inc.

-- Hewlett-Packard Company

-- HP Labs

-- Infineon Technologies

-- Infusion

-- Intel Corporation

-- International Business Machines Corporation

-- IBM Almaden Research Center

-- The IBM Toronto Software Lab

-- International Data Corporation (IDC)

-- Internet Corporation for Assigned Names and Numbers

-- Iona Technologies

-- ITSS, Inc.

-- Juniper Networks

-- Lockheed Martin Corporation

-- Macromedia

McKinsey & Company

-- Microsoft Corporation

-- Motorola, Inc.

--Motorola Mobility, Inc.

--Motorola Solutions, Inc.

Mozilla Corporation

-- National Instruments Corporation

-- Nokia Corporation

-- Nortel Networks Corporation

-- Novell, Inc.

-- NVIDIA Corporation

Oracle Corporation

-- Sun Microsystems

-- Philips Semiconductors

-- NXP Semiconductors

-- Pixar Animation Studios

-- Quest Software, Inc.

-- Rational Software Corporation

-- Research in Motion Limited

-- RSA

SANS Institute

-- SAS Institute, Inc.

-- Sega Corporation

-- Siemens AG

-- Silicon Graphics, Inc.

-- Sony Corporation

-- SRI International

-- Standard Performance Evaluation Corporation

-- Taiwan Semiconductor Manufacturing Company, Limited

-- Telcordia Technologies

-- Texas Instruments Inc.

The Standish Group International, Inc.

-- Toshiba Corporation

-- Virage Logic

Virtual University Enterprises

-- Xerox Corporation

-- PARC

-- Yahoo! Inc.

-- Zilog, Inc.--

Organizations

-- ABET, Inc.

-- Computing Accreditation Commission

American Mathematical Society

American National Standards Institute

American Statistical Association

Ames Research Center

Apache Software Foundation

--Argonne National Laboratory

Association for Computing Machinery

--Association for Information Systems

Brazilian Computer Society

--British Computer Society

--Clay Mathematics Institute

--Charles Babbage Institute

Computer History Museum

Computer Press Association

--Computing Community Consortium

--Computing Research Association

Computing Technology Industry Association

--Computer Science Teachers Association

Courant Institute of Mathematical Sciences

CSAB

--Defense Advanced Research Projects Agency

--Eclipse Foundation

--Electronic Frontier Foundation

Electronic Visualization Laboratory

--European Network and Information Security Agency

--European Telecommunications Standards Institute

--Federal Communications Commission

Free Software Foundation

Human Factors and Ergonomics Society

--IEEE Computer Society

-- Test Technology Technical Council

International Computer Music Association--

-- International Game Developers Association

-- International Organization for Standardization

International Software Benchmarking Standards Group Limited

-- ITU

-- Isaac Newton Institute for Mathematical Sciences

-- JISC

Jet Propulsion Laboratory

Joint Photographic Experts Group

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-- Langley Research Center

-- Lawrence Berkeley National Laboratory

-- Lawrence Livermore National Laboratory

-- Linux Professional Institute

-- London Mathematical Society

-- Los Alamos National Laboratory

Massachusetts Institute of Technology

-- MIT Media Lab

-- Personal Robots Group

--Max Planck Institutes

--Moving Picture Experts Group

Mozilla Foundation

National Academy of Engineering

National Academy of Sciences

National Center for Education Statistics

-- National Institute of Standards and Technology

National Institutes of Health

-- National Research Council

-- National Science Foundation

-- Oak Ridge National Laboratory

-- Object Management Group

Open Network Laboratory

-- OSGi Alliance

-- Operational Research Society

Open Knowledge Society

-- Open Source Initiative

-- Pacific Northwest National Laboratory

-- Patent and Trademark Office--

-- Royal Statistical Society

-- San Diego Supercomputer Center

Sandia National Laboratories

-- Semiconductor Industry Association

-- Software Engineering Institute

-- SLAC National Accelerator Laboratory

-- Systems Research Center

TDWI

-- The Open Group

Transaction Processing Performance Council

Trusted Computing Group--

-- Viewpoints Research Institute

-- Wikimedia Foundation, Inc.

-- World Intellectual Property Organization

--World Wide Web Consortium

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People in computing

-- A. van Wijngaarden

-- Ada Lovelace

-- Alan Cooper

Alan Curtis Kay

Alan J. Perlis

-- Alan Mathison Turing

-- Allen Kent

-- Allen Newell

An'an Wang

-- Andrew S. Grove

-- Barbara Liskov

-- Barry W. Boehm

-- Bill Gates

-- Bill Joy

-- Bill Millard

-- Bjarne Stroustrup

Blaise Pascal

-- Bruce Schneier

-- C. A. R. Hoare

-- Charles Babbage

-- Charles Tandy

-- Claude Elwood Shannon

-- Clive Sinclair

Cyril W. Cleverdon

-- David Hilbert

David Patterson

David Sarnoff

-- Donald Ervin Knuth

-- Douglas R. Hofstadter

-- Edmund Callis Berkeley

-- Edvard Scheutz

Elliot Irving Organick

-- Gary McGraw

-- Georg Scheutz

Gene H. Golub

-- Gordon Bell

-- Grace Murray Hopper

-- H. D. Goode

-- Harry H. Goode

-- Harvey M. Deitel

-- Herbert A. Simon

-- Herbert R. J. Grosch

-- Herman H. Goldstine

Herman Hollerith

Ivar Jacobson

James Gosling

J. H. Wilkinson

-- J. Presper Eckert

--J. Richard Buchi

--Jakob Nielsen

Jay Wright Forrester

--Jim Blinn

-- Jim Gray

John Vincent Atanasoff

-- John Cocke

John McCarthy

John R. Pasta

-- John Sculley

-- John Von Neumann

-- John W. Mauchly

-- Jon Kleinberg

Kazimierz Kuratowski

-- Kent Beck

Konrad Zuse

-- Kurt Godel

Linus Torvalds

--Marian Smoluchowski

Mark D. Weiser

Martin Fowler

-- Marvin Lee Minsky

-- Maurice V. Wilkes

Peter J. Denning

Peter Norton

-- R. Milner

Richard M. Karp

-- Robert R. Everett

Seymour Papert

Stefan Banach

-- Steve Jobs

-- Thomas J. Watson

-- Thomas Watson, Jr.

-- Vannevar Bush

-- William C. Norris

Technologies

-- ActionScript

-- ActiveX

-- Ada language

-- ANSI C--

-- Ajax

-- AppleScript

-- AutoCAD

-- BASIC

-- Bluetooth

-- Business Process Execution Language

-- CDMA systems

-- Cell Broadband Engine

-- CMOS

-- CORBA

-- Datalog

-- DB2

DNS (Domain Name System)

-- DOS

-- Dreamweaver

DSL

DSM

-- DVDs

-- Eclipse

-- Ethernet

-- Excel

-- CD-ROMs

-- Facebook

-- Internet Explorer

-- Chrome

-- Firefox

-- Flickr

-- Fortran

FreeBSD

Gmail

-- Google Earth

-- Google

-- Google Maps

-- Google Scholar

-- GSM

--Haskell

-- HDTV

-- HP-UX

-- InfiniBand

IP Multimedia Subsystem

iPad

-- iPhone

-- iPod

-- IPTV

-- IPv6

JAVA ME

-- JavaScript

-- JPEG

-- JSP

-- LAPACK

-- Linux

-- Lotus Notes

-- Macintosh OS

-- Macintosh

-- Mathematica

-- MATLAB

MIMO Systems

-- Mobile IP

-- WiMAX

-- MODIS

-- MP3

-- MS-DOS

MSN (portal)

Myspace

-- MySQL

-- NetWare

OFDM System

Office

-- OpenMP

-- Oracle Database

-- Outlook

-- PDF

-- Pentium

Photoshop

PlanetLab

--Pocket PC

PowerPC

-- PowerPoint

-- Prolog

-- QuarkXPress

-- QuickBooks

-- Quicken

-- QuickTime

-- Ruby on Rails

-- RISC processors

-- Samba

SELinux

-- SharePoint

SIMD architectures

-- Simulink

-- Smalltalk

-- Short Message Service

-- SNMP

-- Solaris

SONET

-- SPARC

-- SQL Server

-- Secure Sockets Layer

--Skype

TMS320C

-- Transport Layer Security

TREC

-- Twitter

-- UMTS

Unicode

-- Usenet

-- UWB

-- VHDL

Visual Basic

-- VMware

-- VoiceXML

-- VRML

-- Wifi

-- Wikipedia

-- Windows

-- Windows environment

-- WordNet

-- X-Window

-- X3D

-- XILINX

Yahoo! (portal)

-- YouTube

-- ZigBee

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