

Category	Subcategory	Items	
Fundamental Theories (Covering mainly theories with proofs) (Computing Group)	Information Mathematics	2010100 Information Mathematics - ALL	
		2010101 Graph theory	
		2010102 Combinatorics	
		2010103 Coding theory	
		2010104 Operations research	
		2010105 Probability/statistics	
		2010106 Symbolic logic (Formal logic)	
		2010107 Non-linear dynamics	
		2010108 Complexity (chaos, fractal, etc.)	
		2010109 Information theory	
	2010199 Misc.		
	Algorithm Theory	2010200 Algorithm Theory - ALL	
		2010201 Graph algorithms	
		2010202 Data structures	
		2010203 Parallel/distributed algorithms	
		2010204 Probabilistic algorithms	
		2010205 Approximation algorithms	
		2010206 Computational geometry	
		2010207 Heuristic algorithms (meta-heuristics, neural networks, genetic algorithms)	
		2010208 Numerical computation and analysis	
		2010209 Symbolic and algebraic computation	
		2010211 String algorithm (text algorithm)	
		2010212 Discrete optimization	
		2010213 Graph classes	
		2010214 Algorithms for large data sets	
	2010215 Compact and memory efficient algorithm		
	2010216 Enumeration and counting		
	2010299 Misc.		
	Computational Theory	2010300 Computational Theory - ALL	
		2010301 Automata/formal languages theory	
2010302 Computability theory			
2010303 Computational complexity theory			
2010304 Computational learning theory			
2010305 Non-traditional computing (quantum computation and molecular computation)			
2010399 Misc.			
Theory of Programs	2010400 Theory of Programs - ALL		
	2010401 Computation models		
	2010402 Program semantics		
Logic	2010403 Program transformation and synthesis		
	2010500 Logic - ALL		
Other Theories	2010501 Non-standard logic (non-monotonic logic, fuzzy logic, uncertainty inference)		
	2010502 Automated theorem proving		
	2010503 Inference mechanisms		
	2010504 Logic design theory		
	2010600 Other Theories - ALL		
Computer Architecture and Hardware (Computing Group)	Computer Architecture	2020100 Computer Architecture - ALL	
		2020101 Processor architecture (superscalar, VLIW, multithread, speculative execution, branch prediction, single-chip multiprocessors, vector processors, multimedia support, etc.)	
		2020102 Memory architecture (cache memory, shared memory, distributed shared memory, embedded DRAM, virtual memory, prefetch, data transfer controllers, shared registers, interleaving, etc.)	
		2020103 I/O architecture	
	2020104 Application specific architecture (signal processors, graphic processors, network processors, etc.)		
	2020199 Misc.		
	Parallel and Distributed Processing Technology	2020200 Parallel and Distributed Processing Technology - ALL	
		2020201 Parallel architecture (multiprocessors, interconnection networks, processor arrays, SIMD, etc.)	
		2020202 Distributed architecture (cluster computing, global computing, etc.)	
		2020203 Parallelizing compilers	
2020204 Load distribution and scheduling			
2020205 Parallel language extension (openMP, MPI, etc.)			
2020206 Performance tuning, performance evaluation (PAPI)			
2020299 Misc.			
Architecture and Software Integration	2020300 Architecture and Software Integration - ALL		
	2020301 Architecture support for OS/compilers/languages (support for synchronization, scheduling, data transfer, etc.)		
	2020302 Software optimization for architecture (software optimization for registers, caches, etc.)		
	2020303 Architecture emulation		
2020304 Object code translation			
2020399 Misc.			
Innovative Computing Methods	2020400 Innovative Computing Methods - ALL		
	2020401 Quantum computing		
	2020402 DNA computing		
	2020403 Bio-computing		
	2020404 Reconfigurable computing		
2020499 Misc.			
Computing System Technology	2020500 Computing System Technology - ALL		
	2020501 Implementation techniques		
	2020502 High-reliability techniques		
	2020503 Low-power consumption techniques		
	2020504 Real-time processing techniques		
	2020505 System on a chip		
2020599 Misc.			
Design Automation and Design Methodology	2020600 Design Automation and Design Methodology - ALL		
	2020601 Design environments		
	2020602 Description languages		
	2020603 Logic synthesis		
	2020604 Placement and routing		
	2020605 Design verification and validation		
	2020606 Test pattern generation		
	2020607 Hardware/software co-design		
	2020609 High-level design and verification		
	2020610 Case study of design methodologies		
2020699 Misc.			
Logic Circuits and Devices	2020700 Logic Circuits and Devices - ALL		
	2020701 Logic design theory		
	2020702 Asynchronous circuits		
	2020703 Logic devices		
	2020704 High-speed devices		
	2020705 Memory devices		
	2020706 FPGA		
	2020707 Multi-valued logic		
2020799 Misc.			
Programming (Computing Group)	Misc. Computer	2020801 Misc. Computer Applications	
		2020802 Misc. Computer Applications	
	Design of Programming Languages	2030100 Design of Programming Languages - ALL	
		2030101 Refining, extending, and integrating programming languages	
		2030102 General-purpose programming languages	
		2030103 Application-specific programming languages	
		2030104 Programming languages for novices and for education	
		2030105 Meta-languages	
		2030106 Principles and elements of programming languages	
		2030199 Misc.	
		Implementation Techniques for Programming Languages	2030200 Implementation Techniques for Programming Languages - ALL
			2030201 Compilers
	2030202 Interpreters		
	2030203 Loaders and linkers		
	2030204 Runtime systems		
2030205 Memory management			
2030206 Implementation techniques for embedded systems			
2030207 Implementation techniques for parallel and distributed systems			
2030299 Misc.			
Programming Environments	2030300 Programming Environments - ALL		
	2030301 Debugging support		
	2030302 Monitoring and profiling		
	2030303 Software visualization		
	2030304 Integrated environments		
	2030305 Libraries and frameworks		
2030399 Misc.			
Programming Methodologies and Paradigms	2030400 Programming Methodologies and Paradigms - ALL		
	2030401 Software patterns		
	2030402 Programming in natural languages		
	2030403 Programs with proofs and certificates		
	2030404 Programming beyond desktop environments		
2030405 Program verification and analysis			
2030499 Misc.			
Operating Systems (Computing Group)	System Software Design and Implementation	2040100 System Software Design and Implementation - ALL	
		2040101 Kernel design and implementation	
		2040102 Distributed system design and implementation	
		2040103 Concurrent system design and implementation	
		2040104 Wide-area network system design and implementation	
		2040105 Multimedia system design and implementation	
		2040106 Continuous media system design and implementation	
		2040107 System development environment design and implementation	
		2040199 Misc.	
		Implementation of Operating System Functionality	2040200 Implementation of Operating System Functionality - ALL
	2040201 Security		
	2040202 Real-time technology		
	2040203 Fault-tolerance		
	2040204 Availability		
	2040205 Applicability		
2040206 Expandability			

		2040299 Misc.
	Basic System Software Technology	2040300 Basic System Software Technology - ALL 2040301 Scheduling 2040302 Process management 2040303 Memory management 2040304 File systems 2040305 I/O management 2040306 Communication management 2040307 Network protocols 2040308 Device drivers 2040309 Multi-processor systems 2040399 Misc.
	Embedded System Technology	2040400 Embedded System Technology - ALL 2040401 Mobile computing 2040402 Wearable computing 2040403 Networked appliances 2040404 Appliance servers 2040499 Misc.
Software Engineering [Computing Group]	Requirements Engineering	2050100 Requirements Engineering - ALL 2050101 Requirements acquisition 2050102 Requirements analysis 2050103 Requirements definition 2050199 Misc.
	Software Analysis and Design	2050200 Software Analysis and Design - ALL 2050201 Analysis and design methodologies 2050202 Object-oriented analysis and design 2050203 Software reuse 2050204 Software architecture 2050205 Software patterns 2050206 Software components 2050207 Software frameworks 2050208 Product line technologies 2050209 Real-time system design 2050210 Reactive system design 2050211 Method engineering 2050299 Misc.
	Formal Methods	2050300 Formal Methods - ALL 2050301 Specification models and languages 2050302 Application of formal methods 2050399 Misc.
	Testing and Maintenance	2050400 Testing and Maintenance - ALL 2050401 Test processes 2050402 Test data and test suites 2050403 Program analysis and comprehension 2050499 Misc.
	Evaluation and Management	2050500 Evaluation and Management - ALL 2050501 System metrics and cost estimation 2050502 Program metrics 2050503 Quality assurance 2050504 Process management 2050505 Configuration and version management 2050599 Misc.
	Development Environments and Automated Technologies	2050600 Development Environments and Automated Technologies - ALL 2050601 Automatic generation of software artifacts 2050602 Simulation technologies 2050603 Computer-aided modeling 2050604 Management support (configuration management, project management, etc.) 2050605 Activity support (incl. communication support) 2050606 Design specification representations and conversions 2050699 Misc.
	Software Processes	2050700 Software Processes - ALL 2050701 Process modeling and description 2050702 Process monitoring and control 2050703 Process improvement 2050799 Misc.
	Operation	2050800 Operation - ALL 2050801 Operation and utilization 2050802 Maintenance 2050899 Misc.
Database [Computing Group]	Data Models and Database Design	2060100 Data Models and Database Design - ALL 2060101 Conceptual models 2060102 Data models 2060103 Database manipulation and languages 2060104 Integrity constraints 2060105 Database design 2060106 Query/transaction processing 2060107 Reliability/recovery/security 2060108 Clustering/indexing 2060109 Replica management 2060199 Misc.
	Database Systems	2060200 Database Systems - ALL 2060201 Parallel/distributed/multi databases 2060202 Main-memory databases 2060203 Active databases 2060204 Mobile computing and databases 2060205 Multimedia databases 2060206 Historical databases and version management 2060207 Geographical databases and spatial data management 2060208 Temporal management 2060209 Broadcast-oriented information systems 2060210 Information resource management and repository 2060211 Data warehouses/OLAP 2060299 Misc.
High-performance Computing [Computing Group]	Theory and Practice of Computational Science and Numerical Simulations	2070100 Theory and Practice of Computational Science and Numerical Simulations - ALL 2070101 Discrete mathematics and algorithms (including complexity theory and computational geometry) 2070102 Algorithms for media processing and networks (including natural language processing, data compression, and cryptography) 2070103 Discrete optimizations and heuristics (including learning theory) 2070104 Parallel and distributed algorithms 2070105 Algorithms for numerical simulations and applications (including performance tuning and parallelization) 2070106 Hardware architectures for numerical simulations and applications 2070107 Implementations and evaluations of numerical simulations and applications 2070199 Misc.
	Numerical Algorithms	2070200 Numerical Algorithms - ALL 2070201 Approximation and discretization 2070202 Linear algebra and matrix computations 2070203 Nonlinear equation solvers and optimization 2070204 Ordinary/partial differential equation solvers (including FFT and integral transforms) 2070205 Analysis and statistics (including differential, integral, random number, and Monte Carlo methods) 2070206 Algebraic equation solvers 2070207 Performance evaluations and performance enhancements (including performance tuning and parallelization) 2070208 Numerical libraries and benchmark suites 2070299 Misc.
	High-performance Computer Architectures	2070300 High-performance Computer Architectures - ALL 2070301 Processor architectures 2070302 Memory architectures 2070303 Interconnection networks 2070304 I/O systems 2070305 Cluster systems 2070399 Misc.
	Parallel Processing Software	2070400 Parallel Processing Software - ALL 2070401 Parallel operating systems 2070402 Cluster software 2070403 Parallel programming interfaces 2070404 Runtime support for parallel systems 2070405 Parallelizing compilers 2070406 Parallelization support tools 2070499 Misc.
	HPC Application Techniques	2070500 HPC Application Techniques - ALL 2070501 Visualization of numerical output data 2070502 Operation support systems 2070599 Misc.
	Performance Evaluation	2070600 Performance Evaluation - ALL 2070601 Parallel processing performance models 2070602 Benchmark and performance measurement techniques 2070603 Performance and trace analysis (including visualization) 2070604 Computation/communication modeling 2070605 Execution time prediction and its applications (including simulation) 2070606 Performance metrics (LINPACK, Spec, Complexity, Scalability, etc.) 2070607 Deadline scheduling and real-time processing 2070699 Misc.
	Global Distributed Computing Systems	2070700 Global Distributed Computing Systems - ALL 2070701 Security and user management 2070702 Scheduling and resource management 2070703 Metacomputing systems 2070704 Global distributed programming models and middleware 2070705 Global data-intensive computing 2070706 Applications and systems of global distributed processing 2070799 Misc.
Embedded Systems [Computing Group]	Architecture	2080100 Architecture - ALL 2080101 System architecture 2080102 Core processors 2080103 DSP 2080104 IP core

		2080105 Arithmetic circuits
		2080106 Software architectures
		2080107 Low-power architectures
		2080108 Parallel compilers
		2080109 Load balancing and scheduling
		2080110 Parallel languages (openMP, MPI, etc.)
		2080111 Performance tuning and evaluation (PAPI)
		2080199 Misc.
	Design Methodologies	2080200 Design Methodologies - ALL
		2080201 Development processes
		2080202 Design methods
		2080203 System description languages
		2080204 HW/SW codesign
		2080205 HW/SW partitioning
		2080206 Embedded software development methods
		2080207 Design platforms
		2080299 Misc.
	Development Environments	2080300 Development Environments - ALL
		2080301 Development environments and tools
		2080302 EDA tools
		2080303 Compilers
		2080304 CASE tools
		2080305 Simulation environments
		2080306 Rapid prototyping environments
		2080399 Misc.
	Verification, Testing, and Debugging	2080400 Verification, Testing, and Debugging - ALL
		2080401 Verification/testing methods and environments
		2080402 Debugging methods and tools
		2080403 Co-verification
		2080404 Co-simulation
		2080405 Design for testability
		2080406 Security and reliability
		2080499 Misc.
	OS and Networks	2080500 OS and Networks - ALL
		2080501 Embedded OSes
		2080502 Real-Time OSes
		2080503 Middleware
		2080504 Network interconnectivity
		2080505 Communication systems and standardization
		2080599 Misc.
	Case Studies	2080600 Case Studies - ALL
		2080601 Case Studies
		2080602 Application of embedded systems
		2080603 New domains of embedded systems
		2080604 Performance evaluation
		2080699 Misc.
Bioinformatics (Computing Group)	Databases	2090100 Databases - ALL
		2090101 Nucleotide sequences, amino acid sequences
		2090102 Genomes
		2090103 3D structures and molecular properties
		2090104 Interaction
		2090105 Gene expression
		2090106 Biological resources
		2090107 Ecology
		2090108 Standardization, interoperability, and integration
		2090199 Misc.
	Sequence and Structure Analysis	2090200 Sequence and Structure Analysis - ALL
		2090201 Homology search
		2090202 Multiple alignment
		2090203 Gene prediction
		2090204 Prediction of regulatory regions
		2090205 Protein sorting and localization
		2090206 3D structure
		2090207 Functional analysis
		2090299 Misc.
	Genome Analysis	2090300 Genome Analysis - ALL
		2090301 Comparative genomics
		2090302 Gene expression
		2090303 Gene network
		2090304 Polymorphism
		2090305 Medical informatics and applications
		2090399 Misc.
	Modeling	2090400 Modeling - ALL
		2090401 Cells
		2090402 Development
		2090403 Metabolism
		2090404 Immunology
		2090405 Brains/nervous systems
		2090406 Evolution
		2090499 Misc.
	Applications in Information Science	2090500 Applications in Information Science - ALL
		2090501 Genetic algorithms
		2090502 Artificial life
		2090503 DNA computing
		2090599 Misc.
Fundamentals of Networks/Internet (Network Group)	Network Architecture	2100100 Network Architecture - ALL
		2100101 High-speed/broadband communication systems
		2100102 LAN/WAN
		2100103 Broadband Internet
		2100104 Client-server architecture
		2100105 Directories
		2100106 Routers/switches
		2100107 Multimedia coding
		2100108 Active networks
		2100110 Overlay networks, P2P
		2100111 Disaster communication systems
		2100199 Misc.
	Network Protocols	2100200 Network Protocols - ALL
		2100201 Communication protocols
		2100202 Routing protocols
		2100203 Resource reservation protocols
		2100204 Multicast communication
		2100205 Multimedia communication protocols
		2100206 Distributed and cooperative protocols
		2100207 Protocol design
		2100208 Protocol verification
		2100209 High-performance protocol processing
		2100299 Misc.
	Distributed Processing	2100300 Distributed Processing - ALL
		2100301 Synchronization control
		2100302 Mutual exclusion control
		2100303 Distributed resource management
		2100304 Distributed algorithms
		2100305 Load balancing and migration
		2100399 Misc.
	Distributed System Operation and Management	2100400 Distributed System Operation and Management - ALL
		2100401 Internet/LAN operation and management technology
		2100402 Security/risk management
		2100403 Fault management
		2100404 Traffic analysis/management
		2100405 Distributed system implementation and operation technology
		2100406 Next-generation communication technology
		2100499 Misc.
	Wireless/Mobile Networks	2100500 Wireless/Mobile Networks - ALL
		2100501 Mobile computing environments
		2100502 Portable terminals
		2100503 Security
		2100504 Mobile network architecture
		2100505 Adhoc networks
		2100506 Mobile network protocols
		2100507 Mobile network management and operation
		2100508 Wireless LAN
		2100509 Satellite communication
		2100510 Personal communication networks
		2100512 Delay / Disruption Tolerant Networks (DTN)
		2100513 Sensor networks
		2100514 Body area networks
		2100515 Wireless Personal Area Networks (Wireless PAN)
		2100516 Mesh networks
		2100517 Ubiquitous networks
		2100518 Cross-layer design
		2100519 Cognitive radio
		2100599 Misc.
	Network Quality and Control	2100600 Network Quality and Control - ALL
		2100601 Traffic theory
		2100602 Traffic control/analysis
		2100603 QoS
		2100604 Resource reservation
		2100605 High-quality networks
		2100606 Network simulation
		2100607 Network performance analysis
		2100699 Misc.
Applications of Networks/Internet	Network Service Basics	2110100 Network Service Basics - ALL

[Network Group]		2110101 E-Mail systems	
		2110102 WWW	
		2110103 Instant message and presence services	
		2110104 Network service infrastructure	
		2110105 Infomediary systems	
		2110107 Digital consumer electronics	
		2110108 Cloud computing (IaaS, PaaS, SaaS)	
		2110109 Service computing	
		2110199 Misc.	
	Network Services	2110200 Network Services - ALL	
		2110201 Web search engines	
		2110202 E-commerce	
		2110203 Administrative services	
		2110204 Distance learning services/web-based training	
		2110205 Online entertainment	
		2110206 WWW design	
		2110207 WWW application services	
		2110208 Home networks	
		2110209 Broadcast services	
		2110211 Contents delivery	
		2110212 Social networks	
		2110213 Web services	
		2110299 Misc.	
	Mobile Computing	2110300 Mobile Computing - ALL	
		2110301 Location based services	
		2110302 Mobile agents	
		2110303 Mobile applications	
		2110304 Ubiquitous computing	
		2110305 Wearable computing	
		2110307 Robot systems	
		2110308 IC tag, RFID tag, Smart tag	
		2110309 Context awareness	
		2110310 Life log	
		2110399 Misc.	
	ITS	2110400 ITS - ALL	
		2110401 Traffic management	
		2110402 Driving support	
		2110403 Image processing	
		2110404 Communication protocols	
		2110405 Network technology	
		2110406 Geographical information services	
		2110407 Intermodality	
		2110408 Applications	
		2110499 Misc.	
	Middleware	2110500 Middleware - ALL	
		2110501 Middleware architecture	
		2110502 Client-server architecture	
		2110503 Distributed objects	
		2110504 Network middleware	
		2110506 SOA (Service Oriented Architecture)	
		2110599 Misc.	
	Distributed Systems Operation and Management	2110600 Distributed Systems Operation and Management - ALL	
		2110601 Internet/LAN operation and management technology	
		2110602 Fault management	
		2110603 Traffic analysis/management	
		2110604 Distributed system configuration and operation technology	
		2110606 Sustainable systems	
		2110607 Smart grid	
		2110608 Green networks	
		2110609 Virtualization	
		2110610 Data center	
		2110699 Misc.	
	Security [Network Group]	Security Infrastructure	2120100 Security Infrastructure - ALL
			2120101 Common key cryptosystems
			2120102 Public key cryptosystems
			2120103 Cryptographic hash functions and random numbers
			2120104 Quantum cryptography
			2120105 Information hiding
			2120106 Secret sharing
			2120107 Electronic signatures
			2120199 Misc.
		Network Security	2120200 Network Security - ALL
			2120201 Computer viruses
			2120202 Firewalls
			2120203 Security protocols
			2120204 Intrusion detection
			2120205 Access control and authentication
			2120206 Key distribution and key management
			2120208 Virtual Private Networks (VPN)
			2120299 Misc.
		Security and Society	2120300 Security and Society - ALL
			2120301 Electronic notary public
			2120302 Electronic government
			2120303 Electronic voting/auctions
			2120304 Electronic commerce
			2120305 Computer and communication ethics
			2120306 Software protection
			2120307 Copyright protection
			2120309 Content protection
			2120310 Privacy protection
			2120311 Psychology and trust
			2120399 Misc.
		Contingency Management/Risk Management	2120400 Contingency Management/Risk Management - ALL
			2120401 Risk analysis and assessment
			2120402 Decision-making/information security policy
			2120403 System evaluation and audit
			2120404 Fraud/error detection
			2120405 Contingency planning and disaster recovery
			2120499 Misc.
		Dependability	2120500 Dependability - ALL
		2120501 Dependability/maintainability theory	
		2120502 Dependability/security analysis and evaluation	
		2120503 Dependability design	
		2120504 Fault diagnosis/analysis	
		2120505 Fault tolerance	
		2120599 Misc.	
	System Security	2120600 System Security - ALL	
		2120601 Secure design / implementation	
		2120602 Security test	
		2120603 Web / Mail security	
		2120604 OS, Middleware, Virtualization	
		2120605 Hardware	
		2120606 RFID / Mobile security	
		2120607 Sensor networks	
		2120608 Implementation of cryptosystems	
		2120609 Cryptanalysis, Side channel attack	
		2120610 Authentication	
		2120611 Biometrics	
		2120612 Access control	
		2120613 Information flow control	
		2120614 Forensics	
		2120699 Misc.	
Intelligence and Cognition [Intelligent Technology Group]	Knowledge Processing	2130100 Knowledge Processing - ALL	
		2130101 Knowledge representation	
		2130102 Machine learning	
		2130103 Search and inference	
		2130104 Neural networks	
		2130105 Fuzzy set theory	
		2130106 Evolutionary computing	
		2130107 Complex systems	
		2130108 Knowledge discovery	
		2130109 Knowledge bases	
		2130110 Distributed AI/collaborative AI	
		2130199 Misc.	
	Cognitive Science	2130200 Cognitive Science - ALL	
		2130201 Models for thought	
		2130202 Perception	
		2130203 Distributed cognition	
		2130204 Learning processes	
		2130205 Communication	
		2130299 Misc.	
	Knowledge Community	2130300 Knowledge Community - ALL	
		2130301 Information and knowledge management	
		2130302 Multi-agent systems	
		2130303 Mutual understanding	
		2130304 Virtual communities	
		2130399 Misc.	
	Application Systems	2130400 Application Systems - ALL	
		2130401 Data mining	
		2130402 Text mining	
		2130403 Kansen Information	
		2130404 Robotics	
		2130405 Computer games	

		2130406 Edutainment		
		2130499 Misc.		
Machine Learning & Data Mining		2130500 Machine Learning & Data Mining - ALL		
		2130501 Learning theory		
		2130502 Classification		
		2130503 Regression		
		2130504 Unsupervised learning		
		2130505 Semi-supervised learning		
		2130506 Reinforcement learning		
		2130507 Frequent patterns		
		2130508 Outlier and anomaly detection		
		2130509 Privacy in data mining		
		2130599 Misc.		
		Multi Agents		2130600 Multi Agents - ALL
				2130601 Agent designs, architectures, and theories
				2130602 Distributed problem solving and coordination
				2130603 Negotiation and agreement technologies
				2130604 Agent-based simulation
				2130605 Auction and mechanism design
2130606 Agent-based system development				
2130607 Swarm Intelligence				
2130699 Misc.				
2130700 Game Informatics - ALL				
Game Informatics		2130701 Mathematical foundations of games and puzzles		
		2130702 Game-tree search		
		2130703 Learning in games		
		2130704 Multi-agent games		
		2130705 Imperfect information games		
		2130799 Misc.		
Intelligent Robotics and Automation		2130800 Intelligent Robotics and Automation - ALL		
		2130801 Navigation		
		2130802 Planning		
		2130803 Learning		
		2130804 Decision making under uncertainty		
		2130805 Sensor integration and fusion		
		2130806 Teleoperation and telerobotics		
		2130807 Intelligent vehicles		
		2130899 Misc.		
		2140100 Natural Language Processing - ALL		
Language Processing and Information Contents [Intelligent Technology Group]	Natural Language Processing	2140101 Natural language analysis		
		2140102 Semantic processing		
		2140103 Context/discourse processing		
		2140104 Corpora/language resources		
		2140105 Dictionaries/lexical semantics		
		2140106 Machine translation		
		2140107 Text processing		
		2140109 Sentiment analysis		
		2140110 Natural language generation, paraphrasing		
		2140199 Misc.		
	Speech Processing		2140200 Speech Processing - ALL	
			2140201 Speech analysis/speech coding/speech enhancement	
			2140202 Speech recognition/speech understanding	
			2140203 Speech synthesis/text-to-speech conversion	
			2140204 Spoken discourse/speech translation	
			2140205 Speaker recognition/language recognition	
			2140206 Language model/spoken language corpora	
2140299 Misc.				
Information Retrieval		2140300 Information Retrieval - ALL		
		2140301 Document/full-text/multimedia information retrieval		
		2140302 Classification, organization, and visualization of information		
		2140303 Benchmarks/test collections		
		2140304 Thesauruses/Dictionaries/Ontologies		
		2140306 Link analysis		
		2140307 Learning to rank		
		2140308 Recommendation theory		
		2140399 Misc.		
		2140400 Web Intelligence - ALL		
Web Intelligence		2140401 Web information retrieval		
		2140402 Personalization/navigation		
		2140403 User/community analysis		
		2140404 Web mining		
		2140406 Semantic web		
		2140499 Misc.		
Contents Processing		2140500 Contents Processing - ALL		
		2140501 Structured document description and document databases		
		2140502 Description/generation/version control/management of complex media contents		
		2140503 Information extraction/summarization/restructuring		
		2140599 Misc.		
Audio and Visual Media [Information Systems Group]	Music Information Processing	2150100 Music Information Processing - ALL		
		2150101 Acoustic analysis/synthesis		
		2150102 Electronic music instruments/music performance interfaces		
		2150103 Integrated music systems/music usage support systems		
		2150104 Representing musical information/languages for music		
		2150105 Music code processing (recognition/generation)		
		2150106 Music analysis/cognition for music		
		2150107 Music composition/music arrangements (algorithmic composition/automated composition)		
		2150108 Automated music performance/accompaniment/concerts		
		2150109 Music database/music information retrieval		
	2150110 Integration with other media			
	2150119 Kansei music information processing			
	2150199 Misc.			
	Image Processing		2150200 Image Processing - ALL	
			2150201 Image correction/geometric correction/image estimation	
			2150202 Image feature extraction	
			2150203 Image classification	
2150204 Image coding				
2150205 Image recognition/understanding				
2150206 Motion picture recognition/understanding				
2150207 Active vision				
2150208 3D shape/reflection estimation/measurement				
2150299 Misc.				
Computer Graphics		2150300 Computer Graphics - ALL		
		2150301 Information visualization		
		2150302 Geometric modeling		
		2150303 CAD		
		2150304 Image synthesis		
		2150305 Virtual reality/artificial reality/augmented reality		
		2150306 Animation		
2150307 Application systems				
2150399 Misc.				
Multi-Modal		2150400 Multi-Modal - ALL		
		2150401 Media conversion		
		2150402 Media integration		
		2150499 Misc.		
Body Information		2150500 Body Information - ALL		
Interaction [Information Systems Group]	Human-Interface Basics	2160100 Body information processing/integration with physical objects		
		2160100 Human-Interface Basics - ALL		
		2160101 Kansei information processing		
		2160102 Interface design		
		2160103 User modeling		
		2160104 Usability		
	2160105 Media art			
	2160106 Cognitive models			
	2160199 Misc.			
	User Interfaces and Interactive Systems		2160200 User Interfaces and Interactive Systems - ALL	
			2160201 Graphical user interfaces	
			2160202 Perceptual user interfaces	
			2160203 Input-output devices	
			2160204 Collaborative interfaces	
			2160205 Multi-modal interfaces	
			2160206 PDA interfaces	
			2160207 Immersive interfaces	
2160208 Wearable computing				
2160209 Tangible computing				
2160299 Misc.				
Intellectual Creative Tasks		2160300 Intellectual Creative Tasks - ALL		
		2160301 Creativity support		
		2160302 Learning support		
		2160303 Design support		
		2160304 Authoring support		
		2160305 Composition support		
2160399 Misc.				
Group Interaction Support and Groupware		2160400 Group Interaction Support and Groupware - ALL		
		2160401 Collaboration basics		
		2160402 Communication support		
		2160403 Collaborative work support		
		2160404 Group decision-making systems		
		2160405 Collaborative creativity support		
		2160406 Computer-supported collaborative learning		
		2160407 Meeting support		
		2160408 Organizational knowledge and knowledge management		
		2160409 Business process engineering and workflow		
2160410 Groupware frameworks				

		2160411 Mobile groupware
		2160412 E-Mail application systems
		2160413 Information sharing systems
		2160414 Collaborative virtual environments
		2160499 Misc.
Information and Humanity (Information Systems Group)	Education	2170100 Education - ALL
		2170101 Information study
		2170102 Education for computing professionals
		2170103 Teacher education
		2170104 Special needs education
		2170105 Education support
		2170106 Design, measurement, and evaluation of education
		2170107 Development of teaching materials
		2170108 Learning
		2170199 Misc.
		Learning Support
	2170201 Tutoring systems	
	2170202 Computer-assisted language learning	
	2170203 Collaborative learning	
	2170204 Distance learning	
	2170205 Lifelong learning	
	2170206 Models for learning support	
	2170299 Misc.	
	Medicine and Welfare Support for Social Activities	2170301 Medicine and welfare
		2170400 Support for Social Activities - ALL
		2170401 Organizational support
		2170402 Community support
		2170403 Universal design
		2170404 E-government
		2170405 Theories and models for network communities
	2170406 Support for community development	
	2170499 Misc.	
	Information Systems for Society and Humans	2170500 Information Systems for Society and Humans - ALL
		2170501 Management of information, data and knowledge
		2170502 Information needs
		2170503 Information systems as social infrastructures
		2170504 Regional information systems and environmental information systems
		2170505 Information systems for organizational activities (profit and nonprofit organizations)
		2170506 Information systems for individuals
		2170507 End user computing
		2170508 Information and information technology
		2170509 Information technology for organizational change
		2170510 Application frameworks
		2170511 Applications of information systems to society and enterprises
		2170512 E-businesses
	2170599 Misc.	
	Information Systems and Society	2170600 Information Systems and Society - ALL
		2170601 Relationships between information systems and individuals/organizations/society
		2170602 Laws and ethics for information systems
2170603 Professionalism for information system engineers		
2170604 Risk management of information systems		
2170699 Misc.		
Applications in Humanities	2170700 Applications in Humanities - ALL	
	2170701 Model structuring	
	2170702 Numerical processing	
	2170703 Text analysis	
	2170704 Image processing	
	2170705 Digital archives	
	2170706 Metadata	
	2170707 Reconstruction and restructuring	
	2170708 Museums and libraries	
	2170709 Arts	
2170799 Misc.		
Law and Ethics	2170800 Law and Ethics - ALL	
	2170801 Standardization (internationalization and localization)	
	2170802 Information ethics	
	2170803 Intellectual property	
		2170899 Misc.