

Glossary and Subject Index

Brigitte Endres-Niggemeyer

Glossary and Subject Index Use

The glossary lists and explains technical terms used in the book. It works as a subject index, but it comes up with short descriptions of the concepts instead of merely listing them. This has its reasons in the behavior of mashups. As they spread out over many areas, they may draw readers into surroundings where they risk to be confronted with new concepts, so that sometimes some assistance may be welcome. Almost all glossary entries link to the website or another resource (most often a scientific paper) from where the explanation was taken and where more information is available. Often Wikipedia helps with some knowledge first aid. From the Wikipedia pages, links lead to more comprehensive sources and deeper knowledge. Linking straight to the original websites often turned out to be disappointing because they did not offer any suitable material for the short glossary items.

As usual, glossary terms appear in alphabetical order. Their entries end with a set of mnemonic keys that point to the chapters where the term occurs. The keys immediately tell how popular a term is and where it occurs. The keys and their references:

- **[dbpedia]** DBpedia Mashups
- **[eco]** The Mashup Ecosystem
- **[emergency]** Mashups for the Emergency Management Domain
- **[math]** Mashups Using Mathematical Knowledge
- **[search]** Mashups for Web Search Engines
- **[sensors]** Mashups for the Web of Things
- **[simil]** Similarity Mashups for Recommendation
- **[speech]** Speech Mashups
- **[standards]** Mashups Live on Standards
- **[travel]** Travel Mashups
- **[urban]** Urban Mashups

All web links were checked on November 30, 2012.

A

A* (A-star) graph search: A* is a computer algorithm for pathfinding and graph traversal. Noted for its performance and accuracy, it enjoys widespread use. http://en.wikipedia.org/wiki/A*_search_algorithm [dbpedia]

Acoustic model: Large sampling library of speech recordings, capturing all possible sound variations. [speech]

Actuator: Actuators are executing devices of an agent, as opposed to sensors that perceive external stimuli. [eco] [sensors] [urban] [travel]

AIFF: The Audio Interchange File Format (AIFF) is an audio file format standard used for storing sound data on electronic audio devices. The audio data in a standard AIFF file are uncompressed pulse-code modulation (PCM). http://en.wikipedia.org/wiki/Audio_Interchange_File_Format [standards]

AJAX: AJAX (Asynchronous JavaScript and XML) is a group of interrelated web development techniques used on the client-side to create asynchronous web applications. [eco] [search] [sensors] [standards] [travel]

Alert Service (SAS): Web interface for publishing and subscribing to sensor alerts. <http://www.ogcnetwork.net/SAS> [sensors] [travel]

Amazon Elastic Compute Cloud (EC2): Amazon Elastic Compute Cloud (Amazon EC2) is a web service that provides resizable compute capacity in the cloud. It is designed to make web-scale computing easier for developers. Developers pay only for what they use. <http://aws.amazon.com/ec2/> [dbpedia] [speech]

Ambient intelligence: Ambient intelligence (AmI) is intelligence which has been integrated into the environment. AmI refers to electronic environments that are sensitive and responsive to the presence of people. http://en.wikipedia.org/wiki/Ambient_intelligence [eco]

Analog-to-Digital (A/D) converter: Device that converts the input continuous physical quantity to a digital number that represents the quantity's amplitude. http://en.wikipedia.org/wiki/Analog-to-digital_converter [speech]

Annotation: Additional information associated with a web resource, often containing metadata. [dbpedia] [eco] [emergency] [math] [speech] [travel]

Anomalous State of Knowledge (ASK): Situation of knowledge gap in information seeking—a user is unable to specify precisely what is needed to resolve the missing knowledge anomaly. [search]

ANSI: American National Standards Institute. <http://www.ansi.org> [standards]

Application programming interface (API): Specification intended to be used as an interface by software components to communicate with each other. http://en.wikipedia.org/wiki/Application_programming_interface [dbpedia] [eco] [emergency] [math] [search] [sensors] [simil] [speech] [standards] [urban] [travel]

ARML: XML-based Augmented Reality Markup Language. <http://www.opengeospatial.org/projects/groups/arm12.0swg> [standards]

Atom: XML-based Syndication Format for web feeds. <http://tools.ietf.org/html/rfc4287> [simil] [standards]

Audio capturing: Obtaining an external sound signal for a sound file, normally through a microphone. <http://docs.oracle.com/javase/tutorial/sound/capturing.html> [speech]

Audio play-back: Playing audio from a sound file. [speech]

Augmented reality (AR): Live view of a physical, real-world environment augmented by computer-generated sensory input such as sound, video, graphics or GPS data. http://en.wikipedia.org/wiki/Augmented_reality [eco] [standards] [urban]

Authentication: Identifying a computer user, in common practice at least with ID and password. Different from authorization permitting the access to specific resources. [math] [search] [speech] [standards] [travel]

Automatic speech recognition (ASR): Conversion of speech to text. [speech]

Autosuggest functionality: Autosuggest, or autocomplete, shows a list of values in a drop down list that is filtered by the user input in a text field. <http://www.oracle.com/technetwork/developer-tools/adf/learnmore/004-auto-suggest-169120.pdf> [search]

AVS: Chinese Audio Video Standard. [standards]

B

Bayesian classifier: A Bayesian classifier tries to predict the values of features for members of a class from a (natural) class they belong to. Examples are grouped in classes because they have common values for the features. If an agent knows the class, it can predict the values of the other features. If it does not know the class, Bayes' rule can be used to predict the class given (some of) the feature values. The simplest case is the naive Bayesian classifier, which makes the independence assumption that the input features are conditionally independent of each other given the classification. http://artint.info/html/ArtInt_181.html [simil]

Bayesian networks: Bayesian networks are directed acyclic graphs whose nodes represent random variables. Edges represent conditional dependencies stated in probability functions. http://en.wikipedia.org/wiki/Bayesian_network [sensors]

BDGP: Berkeley Drosophila Genome Project. [eco]

BNF: Backus–Naur Form—formal notation for languages. <http://otal.umd.edu/drweb/c++tutorial/lessons/BNF.HTM> [speech]

C

C-SPARQL: SPARQL extension for continuous queries. <http://wiki.larkc.eu/c-sparql> [urban]

Calibration: Calibration sets a measurement device to a standard given by a certified master device. [sensors]

CAS: A computer algebra system (CAS) is a typically interactive software system for computer algebra. Most CAS also include calculus and many other areas of mathematics. http://en.wikipedia.org/wiki/Computer_algebra_system [math]

Cascading Style Sheets (CSS): Cascading Style Sheets (CSS) is a style sheet language used for describing the look and formatting of a document written in a markup language. Its most common application is to style web pages written in HTML and XHTML, but the language can also be applied to any kind of XML document, including plain XML, SVG and XUL. http://en.wikipedia.org/wiki/Cascading_Style_Sheets [standards]

CDC: Center for Disease Control and Prevention. <http://www.cdc.gov> [emergency]

CDMI: Cloud Management Interface: Functional interface that applications will use to create, retrieve, update and delete data elements from the Cloud. <http://www.snia.org/cdmi> [standards]

Chunking: Chunking refers to the data transfer encoding introduced in HTTP 1.1 to deliver data in 'chunks'. This encoding allows HTTP messages to be delivered without specifying the total length of the message which is typically required by the entity header field

Content-length. In chunking mode, the sender specifies the length of each chunk just before the chunk itself and communicates the end of the message by sending a final chunk of length zero to the receiver. http://en.wikipedia.org/wiki/Chunked_transfer_encoding [speech]

Citizen sensor network: Social Web as a network of interconnected, participatory citizens who actively observe, report, collect, analyze and disseminate information about events and activities via text, audio and/or video messages in almost real time. [emergency] [travel]

Closed world assumption: The closed world assumption is the presumption that what is not currently known to be true is false. The opposite of the closed world assumption is the open world assumption, stating that lack of knowledge does not imply falsity. http://en.wikipedia.org/wiki/Closed_world_assumption [urban]

Clustering: Cluster analysis or clustering is assigning a set of objects into groups (called clusters) so that the objects in the same cluster are more similar to each other than to those in other clusters. http://en.wikipedia.org/wiki/Cluster_analysis [emergency] [search] [sensors]

CMYK: Color space for print. CMYK refers to the four inks used in some color printing: cyan, magenta, yellow, and key (black). http://en.wikipedia.org/wiki/CMYK_color_model [standards]

Codec: A codec is a device or computer program capable of encoding or decoding a digital data stream or signal. In practice, “codec” is sometimes used to refer to coding or compression formats. <http://en.wikipedia.org/wiki/Codec> [speech]

Collaborative filtering (CF): Collaborative filtering (CF) is a technique used by some recommender systems. They filter for information or patterns with techniques involving collaboration among multiple agents, viewpoints, data sources, etc. This may include automatic predictions (filtering) about the interests of a user by collecting preferences or taste information from many users (collaborating). http://en.wikipedia.org/wiki/Collaborative_filtering [simil] [urban]

Collaborative software: Collaborative software or groupware is computer software designed to help people involved in a common task to achieve goals. They normally fulfill different roles, e.g. as initiators, stakeholders and administrators. Travel organizing is a scenario where different players collaborate. http://en.wikipedia.org/wiki/Collaborative_software, <http://mashart.org/composableweb2009/paper6.pdf> [eco] [travel] [urban]

Comma-Separated Values (CSV): A Comma-Separated Values (CSV) file stores tabular data (numbers and text) in plain-text form. A CSV file consists of any number of records, separated by line breaks of some kind; each record consists of fields, separated by some other character or string, most commonly a literal comma or tab. Usually, all records have an identical sequence of fields. http://en.wikipedia.org/wiki/Comma-separated_values [eco] [sensors] [standards] [urban]

Complex event processing (CEP): Event processing that combines data from multiple sources to infer events or patterns that suggest more complicated circumstances. The goal is to identify meaningful events (such as opportunities or threats) and respond to them as quickly as possible. http://en.wikipedia.org/wiki/Complex_event_processing [sensors]

Compression: Data compression, source coding, or bit-rate reduction involves encoding information using fewer bits than the original representation. Lossless compression reduces bits by identifying and eliminating statistical redundancy. Lossy compression reduces bits by identifying marginally important information and removing it. http://en.wikipedia.org/wiki/Data_compression [speech] [standards]

Concatenative speech synthesis: Concatenative speech synthesis is based on the concatenation (or stringing together) of segments of recorded speech from a big speech database. http://en.wikipedia.org/wiki/Speech_synthesis [speech]

Consumer mashup: Consumer mashups are made for/created by end-users. They combine data from multiple public sources in the browser and organize them through a simple browser user interface. They are seen as opposed to data mashups and business mashups. [http://en.wikipedia.org/wiki/Mashup_\(web_application_hybrid\)](http://en.wikipedia.org/wiki/Mashup_(web_application_hybrid)) [eco] [travel]

Content Dictionary (CD): A Content Dictionary (CD) is the declaration of a collection of symbols, their names, descriptions, and rules. An example of a CD is 'setname1' which indicates the semantic of such symbols as N, the set of natural numbers. <http://www.openmath.org/cd/index.html> [math]

Context awareness: Behavior of applications that adapt to context conditions during job execution. [eco]

Corpus: A corpus is a set of empirical data, often text or speech. The standard use is statistical analysis and hypothesis testing, checking occurrences or validating linguistic rules on a specific universe. http://en.wikipedia.org/wiki/Text_corpus [dbpedia] [search] [speech]

Cosine Similarity measure: Cosine Similarity is often used when comparing two documents against each other. It measures the angle between the two vectors. If the value is zero the angle between the two vectors is 90 degrees and they share no terms. If the value is 1 the two vectors are the same except for magnitude. http://inside.mines.edu/~ckarlssso/mining_portfolio/similarity.html#cosine [simil]

Crawler: A web crawler is a computer program that browses the World Wide Web in a methodical, automated manner. http://en.wikipedia.org/wiki/Web_crawler [dbpedia] [simil]

Creative Commons: Creative Commons is a non-profit organization that enables the sharing and use of creativity and knowledge through free legal tools, the Creative Commons licenses. <http://creativecommons.org/about> [dbpedia]

Crowd sourcing: Crowd sourcing is a distributed problem-solving and production model. Problems are broadcast to an unknown group of solvers in the form of an open call for solutions. Users submit solutions. The contributor of the solution is, in some cases, compensated either monetarily, with prizes, with recognition or merely with his own intellectual satisfaction. <http://en.wikipedia.org/wiki/Crowdsourcing> [dbpedia] [emergency] [search]

CURIO: Collaborative User Resource Interaction Ontology. http://www.weknowit.eu/content/curio_collaborative_user_resource_interaction_ontology [travel]

D

Data streaming: Data streaming is about monitoring huge and rapidly changing streams of data. Relevant applications include analyzing network traffic, online auctions, transaction logs, telephone call records, automated bank machine operations, and atmospheric and astronomical events. The data streaming model differs from computation over traditional stored datasets since algorithms must process their input by making one or a small number of passes over it, using only a limited amount of working memory. http://twiki.di.uniroma1.it/pub/Ing_algo/WebHome/DFchapter08.pdf [sensors] [speech]

Datalog: Datalog is a declarative logic programming language that syntactically is a subset of Prolog. It is often used as a query language for deductive databases. In recent years, Datalog has found new application in data integration, information extraction, networking, program analysis, security, and cloud computing. <http://en.wikipedia.org/wiki/Datalog> [sensors]

DBMS: Database management system. [sensors] [urban]

DBpedia Ontology: The DBpedia Ontology is a shallow, cross-domain ontology, which has been manually created based on the most commonly used infoboxes within Wikipedia. The ontology currently covers 359 classes which form a subsumption hierarchy and are described by 1775 different properties. <http://wiki.dbpedia.org/Ontology?v=194q> **[dbpedia]**

DBpedia: DBpedia is a crowd-sourced community effort to extract structured information from Wikipedia and to make this information available on the Web. <http://dbpedia.org/About> **[dbpedia] [eco] [emergency] [math] [search] [simil] [standards] [travel] [urban]**

DCCI: Delivery Context Interfaces (DCCI), Nokia-specific sensor specification. **[eco]**

Decision tree: A decision tree is a decision support tool that uses a tree-like graph or model of decisions and their possible consequences, including chance event outcomes, resource costs, and utility. It is one way to display an algorithm. Decision trees are commonly used in operations research, specifically in decision analysis, to help identify a strategy most likely to reach a goal. Another use of decision trees is as a descriptive means for calculating conditional probabilities. http://en.wikipedia.org/wiki/Decision_tree **[simil]**

Demultiplexer: Multiplexing map data from parallel incoming lines to one channel where they are transported in sequence. Demultiplexing separates the data again and distributes them again on parallel lines. <http://www.wisc-online.com/objects/ViewObject.aspx?ID=DIG5704> **[sensors]**

Description logics (DLs): Description logics (DLs) is a family of knowledge representation (KR) formalisms that represent the knowledge of an application domain by first defining the relevant concepts of the domain (its terminology), and then using these concepts to specify properties of objects and individuals occurring in the domain (the world description). <http://www.inf.unibz.it/~franconi/dl/course/dlhb/dlhb-02.pdf> **[dbpedia] [standards]**

Digital signal processing: Digital signal processing (DSP) is the mathematical manipulation of an information signal to modify or improve it. It is characterized by the representation of discrete time, discrete frequency, or other discrete domain signals. DSP includes subfields like: audio and speech signal processing, sonar and radar signal processing, sensor array processing, etc. http://en.wikipedia.org/wiki/Digital_signal_processing **[speech]**

Digital Video Broadcasting (DVB): Digital Video Broadcasting (DVB) is a suite of internationally accepted open standards for digital television. http://en.wikipedia.org/wiki/Digital_Video_Broadcasting **[standards]**

Digital-to-analog (D/A) converter: A digital-to-analog converter converts a digital (usually binary) code to an analog signal. A common use of digital-to-analog converters is generation of audio signals from digital information in music players. http://en.wikipedia.org/wiki/Digital-to-analog_converter **[speech]**

Dijkstra algorithm: Dijkstra's algorithm is a graph search algorithm that solves the single-source shortest path problem for a graph with nonnegative edge path costs, producing a shortest path tree. This algorithm is often used in routing and as a subroutine in other graph algorithms. http://en.wikipedia.org/wiki/Dijkstra's_algorithm **[urban]**

DIN: Deutsches Institut für Normung (German Institute for Standardization). **[standards]**

Disambiguation: Word-sense disambiguation is the process of identifying the sense of a word in a sentence. **[eco] [search]**

Discrete Fourier transformation (DFT): The discrete Fourier transform (DFT) decomposes a discrete time-bound periodic signal to its frequency spectrum, so that the frequencies can be treated separately. Inputs are often created by sampling a continuous function, such as the amplitude of a person's voice over time. The Fast Fourier transform (FFT) algorithm is used most frequently. http://en.wikipedia.org/wiki/Discrete_Fourier_transform **[sensors]**

Document Object Model (DOM): The Document Object Model (DOM) is a cross-platform and language-independent convention for representing of and interacting with objects in HTML and XML documents. http://en.wikipedia.org/wiki/Document_Object_Model [simil] [standards]

Document Type Definition (DTD): A Document Type Definition (DTD) provides a grammar for an XML document. It defines the document structure with a list of legal elements and attributes. <http://www.w3.org/TR/REC-xml>, http://www.w3schools.com/dtd/dtd_intro.asp [standards]

Domain Name System (DNS): The Domain Name System (DNS) is a hierarchical distributed naming system for computers, services, or any resource connected to the Internet or a private network. It resolves queries for these names into IP addresses for the purpose of locating computer services and devices worldwide. By providing a worldwide, distributed keyword-based redirection service, the Domain Name System is an essential component of the functionality of the Internet. http://en.wikipedia.org/wiki/Domain_Name_System [standards]

Domain-specific description language (DSL): A domain-specific language (DSL) is a programming language or specification language dedicated to a particular problem domain, a particular problem representation technique, and/or a particular solution technique. [eco] [emergency]

Drosophila Melanogaster: The fruit fly, a preferred genomics animal because of its fast generation sequence. [eco]

DublinCore: The Dublin Core metadata terms are a set of vocabulary terms which can be used to describe resources. The terms can be used to describe a full range of web resources: video, images, web pages etc. and physical resources such as books and objects like artworks. http://en.wikipedia.org/wiki/Dublin_Core [standards]

DVB-S2: Digital Video Broadcasting–Satellite–Second Generation (DVB-S2) is a digital television broadcast standard that has been designed as a successor for the popular DVB-S system. DVB-S2 is envisaged for broadcast services including standard and HDTV, interactive services including Internet access, and (professional) data content distribution. <http://en.wikipedia.org/wiki/DVB-S2> [standards]

E

ECMA International: ECMA is the Industrial standards organization for Information and Communications Technology (ICT) and Consumer Electronics (CE) standards. <http://www.ecma-international.org> [standards]

EDGE: Enhanced Data rates for GSM Evolution (EDGE) is a digital mobile phone technology that allows improved data transmission rates as a backward-compatible extension of GSM (Global System for Mobile Communications). http://en.wikipedia.org/wiki/Enhanced_Data_Rates_for_GSM_Evolution [speech]

Electronic Product Code (EPC): The Electronic Product Code (EPC) is a universal identifier that provides a unique identity for every physical object anywhere in the world, for all time. Its structure is defined in the EPCglobal Tag Data Standard, which is an open standard freely available for download from the website of EPCglobal. http://en.wikipedia.org/wiki/Electronic_Product_Code, <http://www.gs1.org/epcglobal> [sensors] [standards]

Embedded system/device: An embedded system is a computer system designed for specific control functions within a larger system (washing machine, smartphone etc.), often with

real-time computing constraints. It consists of microcontrollers or digital signal processors (DSP), and possibly also hardware/mechanical parts. http://en.wikipedia.org/wiki/Embedded_system [eco] [math] [sensors] [standards]

EMMA (Extensible Multi-Modal Annotations): EMMA (Extensible Multi-Modal Annotations) is an XML-based data exchange format for the interface between input processors and interaction management systems. <http://www.w3.org/TR/emma/> [speech]

Encryption: Encryption is the process of encoding messages (or information) in such a way that only authorized parties can read it. The information is encrypted using an encryption algorithm and decoded by the reviewer using a decryption algorithm. <http://en.wikipedia.org/wiki/Encryption> [standards]

End-User Development (EUD): End-User Development can be defined as a set of methods, techniques, and tools that allow users of software systems, who are acting as non-professional software developers, at some point to create, modify or extend a software artifact. http://en.wikipedia.org/wiki/End-user_development [eco]

Enforcement Management Model (EMM): The Enforcement Management Model (EMM) is a logical system that helps inspectors to make enforcement decisions in response to breaches of health and safety legislation. <http://www.hse.gov.uk/enforce/emm.pdf> [emergency]

Enterprise Mashup Markup Language (EMML): Enterprise Mashup Markup Language (EMML) is an XML markup language for creating enterprise mashups. Mashed data produced by enterprise mashups are presented in graphical user interfaces as mashlets, widgets, or gadgets. EMML can also be considered a declarative mashup domain-specific language (DSL). <http://en.wikipedia.org/wiki/EMML> [eco]

Environmental intelligence: Insight into the environment via sensor data. [eco] [sensors]

ESRI: ESRI is the leading worldwide supplier of Geographic Information System (GIS) software and geodatabase management applications. <http://www.esri.com> [eco] [urban]

Euclidean distance: The Euclidean distance between points is the length of the line segment connecting them. http://en.wikipedia.org/wiki/Euclidean_distance [eco] [simil]

Executable paper: Paper with data and process environment that enables users to rerun the experiment. [math]

F

FIFO buffer: First In, First Out buffer. [sensors]

FIPS: US Federal Information Processing Standard. <http://www.nist.gov/itl/fips.cfm> [standards]

FlyBase: Database documenting the genome of the fruit fly. <http://flybase.org> [eco]

Folksonomy: A folksonomy is a system of classification derived from the practice and method of collaboratively creating and managing tags to annotate and categorize content. This practice is also known as collaborative tagging, social classification, social indexing, and social tagging. Even without any central controlled vocabulary, consensus around stable distributions and shared vocabularies does emerge. <http://en.wikipedia.org/wiki/Folksonomy> [dbpedia]

Form Interpretation Algorithm (FIA): The Form Interpretation Algorithm (FIA) drives the interaction between the user and a VoiceXML form or menu. <http://vxmlfaq.com/notes-05-Form-Interpretation-Algorithm.html> [speech]

Formulas: A formula symbolically models functional relationships among entities. Current examples are chemical formulas and chemical or mathematical equations. Formula specifications exist, e.g. for financial reporting, but formulas may also be stated according to common practice. For financial reports formulae specs see <http://www.xbrl.org/SpecRecommendations/> [math]

Freebase: Freebase is an open, Creative Commons licensed repository of structured data of almost 23 million entities. An entity is a single person, place, or thing. Freebase connects entities together as a graph. http://wiki.freebase.com/wiki/What_is_Freebase%3F [dbpedia] [eco] [search] [sensors]

Friend of a Friend (FOAF): FOAF (Friend of a Friend) is an ontology describing persons, their activities, and their relations to other people and objects. Anyone can use FOAF to describe him or herself. FOAF allows groups of people to describe social networks without the need for a centralized database. The FOAF vocabulary is expressed using RDF and OWL. [http://en.wikipedia.org/wiki/FOAF_\(software\)](http://en.wikipedia.org/wiki/FOAF_(software)), <http://www.foaf-project.org/about> [dbpedia] [simil]

G

Game With a Purpose (GWAP): A Game with a Purpose (GWAP) is a human-based computation technique in which a computational process performs its function by outsourcing certain steps to humans in an entertaining way. http://en.wikipedia.org/wiki/Human-based_computation_game, <http://www.cs.cmu.edu/~biglou/ieee-gwap.pdf> [urban]

General Packet Radio Service (GPRS): The General Packet Radio Service (GPRS) is a packet oriented mobile data service on the 2G and 3G cellular communication system's global system for mobile communications (GSM). GPRS was originally standardized by the European Telecommunications Standards Institute (ETSI). It is now maintained by the 3rd Generation Partnership Project (3GPP). http://en.wikipedia.org/wiki/General_Packet_Radio_Service [speech] [travel]

Genetic algorithm: A genetic algorithm is started with a set of solutions (represented by chromosomes) called population. Solutions from one population are taken and used to form a new population. During procreation of the next generation, mutations occur. This motivates the hope that the new population will be better than the old one. Solutions (chromosomes of the offspring) are selected according to their fitness—the more suitable they are, the more chances they have to reproduce. This is repeated until some condition (for example a number of populations or improvement of the best solution) is satisfied. <http://www.obitko.com/tutorials/genetic-algorithms/ga-basic-description.php> [simil]

Geocoding: Geocoding is the process of finding associated geographic coordinates (often latitude and longitude) from other geographic data, such as street addresses, or ZIP codes. With geographic coordinates the features can be mapped and entered into Geographic Information Systems, or the coordinates can be embedded into media such as digital photographs via geotagging. <http://en.wikipedia.org/wiki/Geocoding> [eco] [emergency] [sensors] [urban]

Geographic Information System (GIS): A Geographic Information System (GIS) is a system designed to capture, store, manipulate, analyze, manage, and present all types of geographical data. GIS applications are tools that allow users to create interactive queries (user-created searches), analyze spatial information, edit data in maps, and present the results

of all these operations. http://en.wikipedia.org/wiki/Geographic_information_system [eco] [urban]

Geography Markup Language (GML): The Geography Markup Language (GML) is the XML grammar defined by the Open Geospatial Consortium (OGC) to express geographical features. GML serves as a modeling language for geographic systems as well as an open interchange format for geographic transactions on the Internet. http://en.wikipedia.org/wiki/Geography_Markup_Language [standards]

GeoNames: The GeoNames geographical database covers all countries and contains over eight million place names that are available for download free of charge. http://en.wikipedia.org/wiki/Geography_Markup_Language, <http://www.geonames.org> [dbpedia] [eco] [emergency] [search] [sensors]

GeoWGS84 Vocabulary: The Basic Geo Vocabulary is a simple RDF Schema vocabulary for representing latitude, longitude, and altitude information in the WGS84 geodetic reference datum. http://semanticweb.org/wiki/Basic_Geo_Vocabulary [sensors] [urban]

Global Positioning System (GPS): The Global Positioning System (GPS) is a space-based satellite navigation system that provides location and time information in all weather, anywhere on or near the Earth, where there is an unobstructed line of sight to four or more GPS satellites. It is maintained by the United States government and is freely accessible to anyone with a GPS receiver. http://en.wikipedia.org/wiki/Global_Positioning_System [eco]

Google Insights: Google Insights has been merged into Google Trends. Google Trends is a public web facility based on Google Search, which shows how often a particular search-term is entered relative to the total search-volume across various regions of the world, and in various languages. <http://www.google.com/trends/> [emergency]

Granularity: Granularity is the extent to which a structure is broken down into small parts. It is the extent to which a larger entity is subdivided. Coarse-grained units consist of fewer, larger components than fine-grained ones. Granularity levels may be nested. In natural language, one observes many levels of granularity, spanning e.g. from single phones to sentences and discourses. <http://en.wikipedia.org/wiki/Granularity> [sensors] [speech] [travel] [urban]

Graph: A graph is a representation of a set of objects where some pairs of the objects are connected by links. [http://en.wikipedia.org/wiki/Graph_\(mathematics\)](http://en.wikipedia.org/wiki/Graph_(mathematics)) [emergency]

H

HTML: HyperText Markup Language (HTML) is the main markup language for displaying web pages and other information that can be displayed in a web browser. HTML is written in the form of HTML elements consisting of tags enclosed in angle brackets (like <html>), within the web page content. <http://en.wikipedia.org/wiki/HTML> [dbpedia] [eco] [math] [search] [sensors] [simil] [speech] [standards]

HTML5: HTML5 (a heavily re-engineered version of earlier HTML) is a markup language for structuring and presenting content for the web and a core technology of the Internet. HTML5 adds many new features. These include the new <video>, <audio> and <canvas> elements, as well as the integration of scalable vector graphics (SVG) content and MathML for mathematical formulas. <http://en.wikipedia.org/wiki/HTML5> [math] [simil] [speech] [standards] [travel]

HTTP: The HyperText Transfer Protocol (HTTP) is an application protocol for distributed, collaborative hypermedia information systems. HTTP is the foundation of data

communication for the World Wide Web. HTTP/1.1 is the HTTP version in current common use. http://en.wikipedia.org/wiki/Hypertext_Transfer_Protocol [**eco**] [**math**] [**search**] [**simil**] [**speech**] [**standards**]

Human computation: Human computation centers around harnessing human intelligence to solve computational problems that are beyond the scope of existing Artificial Intelligence (AI) algorithms. For instance, Games with a purpose (e.g., the ESP Game) make online gamers generate useful data (e.g., image tags) while playing an enjoyable game. <http://www.youtube.com/watch?v=tx082gDwGcM> [**urban**]

HyperText Query Language (HTQL): HyperText Query Language (HTQL) is a language for the querying and transformation of HTML, XML and plain text documents. HTQL is developed in C++ with fast and efficient data extraction algorithms. HTQL provides COM and Python interfaces for use in JavaScript, Visual Basic, .NET, ASP, and Python applications. <http://htql.net> [**simil**]

ID3 algorithm: ID3 (Iterative Dichotomizer 3) is an algorithm used with decision trees in machine learning. We are given a set of records. Each record has the same structure, consisting of a number of attribute/value pairs. One of these attributes represents the category of the record. The problem is to determine a decision tree that on the basis of answers to questions about the non-category attributes correctly predicts the value of the category attribute. Usually the category attribute takes only the values true, false, or success, failure, or something equivalent. In any case, one of its values will mean failure. Implementations in several languages are available. <http://www.cis.temple.edu/~ingargio/cis587/readings/id3-c45.html> [**simil**]

ID3 metadata: ID3 is a metadata container most often used in conjunction with the MP3 audio file format. It allows information such as the title, artist, album, track number, and other information about the file to be stored in the file itself. <http://en.wikipedia.org/wiki/ID3> [**standards**]

IEEE 802.15.4: The IEEE 802.15.4 standard specifies the physical layer and media access control for low-rate wireless personal area networks. http://en.wikipedia.org/wiki/IEEE_802.15.4 [**sensors**]

IEEE: Institute of Electrical and Electronics Engineers. <http://www.ieee.org/index.html> [**standards**]

IMDb: IMDb is the world's most popular and authoritative source for movie, TV and celebrity content. <http://www.imdb.com> [**dbpedia**] [**simil**]

In-situ mashup: Mashup of a real-world element enhanced with augmented reality information. [**eco**]

Infobox: The infobox is a template for structured data that appears on the upper right side of the Wikipedia website. [**dbpedia**] [**search**]

Information seeking: Information seeking is attempting to obtain information in both human and technological contexts. http://en.wikipedia.org/wiki/Information_seeking [**search**]

Instant messaging: Instant messaging (IM) is a form of communication over the Internet that offers quick transmission of text-based messages from sender to receiver. In push mode instant messaging basically offers real-time direct written language-based online chat. More advanced instant messaging allows enhanced modes of communication, such as live voice or video calling, video chat, and inclusion of hyperlinks to media. http://en.wikipedia.org/wiki/Instant_messaging [**standards**]

Interface metaphor: A GUI (graphical user interface) or other interface metaphor is a set of user interface visuals, actions and procedures that exploit specific knowledge that users already have of other domains. An example is the desktop metaphor with sheets, files, and folders. http://en.wikipedia.org/wiki/Interface_metaphor [**search**] [**standards**]

Internet Engineering Task Force (IETF): The Internet Engineering Task Force (IETF) is a large open international community of network designers, operators, vendors, and researchers concerned with the evolution of the Internet architecture and the smooth operation of the Internet. <http://www.ietf.org/about/> [standards]

Interoperability: Interoperability is the ability of two or more systems or components to exchange information and to use the information that has been exchanged (from IEEE glossary). <http://en.wikipedia.org/wiki/Interoperability> [dbpedia] [eco] [sensors] [standards]

Intonation: Intonation is the variation of pitch (frequency rising or falling pitch) while speaking. Intonation, rhythm, and stress are the three main elements of linguistic prosody. [http://en.wikipedia.org/wiki/Intonation_\(linguistics\)](http://en.wikipedia.org/wiki/Intonation_(linguistics)) [speech]

Inverse Candidate Frequency weight (ICF): The Inverse Candidate Frequency (ICF) weight renders the discriminative power of a word. ICF is inversely proportional to the number of resources it is associated with, as opposed to the Inverse Document Frequency (IDF) weight that represents the general importance of the word in the collection. <http://www.wiwiss.fu-berlin.de/en/institute/pwo/bizer/research/publications/Mendes-Jakob-GarciaSilva-Bizer-DBpediaSpotlight-ISEM2011.pdf> [dbpedia]

IPv6: IPv6 (Internet Protocol version 6) is the latest revision of the Internet Protocol (IP), the primary communications protocol upon which the entire Internet is built. It is intended to replace the older IPv4, which is still employed for the vast majority of Internet traffic as of 2012 but which runs out of addresses. IPv6 uses 128-bit addresses, whereas IPv4 uses 32-bit addresses, so that IPv6 widely enlarges the address space. IPv6 lowpan is IPv6 over Low power Wireless Personal Area Network. <http://en.wikipedia.org/wiki/IPv6> [sensors] [eco]

ISO: International Organization for Standards. <http://www.iso.org/iso> [standards]

Item-based k-nearest neighbor: The k-nearest neighbor algorithm (k-NN) is a method for classifying objects based on closest training examples in the feature space. http://en.wikipedia.org/wiki/K-nearest_neighbor_algorithm [urban]

ITU: International Telecommunication Union. <http://www.itu.int/en/Pages/default.aspx> [standards]

J

Java Server Pages (JSP): Java Server Pages (JSP) technology provides a simplified, fast way to generate dynamic web content. http://en.wikipedia.org/wiki/JavaServer_Pages [standards]

JavaScript: JavaScript is a scripting language commonly implemented as part of a web browser in order to create enhanced user interfaces and dynamic websites. <http://en.wikipedia.org/wiki/JavaScript> [eco] [math] [simil] [speech] [standards] [travel]

JDOM: JDOM provides a complete, Java-based solution for accessing, manipulating, and outputting XML data from Java code. <http://www.jdom.org> [standards]

JSON: JSON (the JavaScript Object Notation) is a text-based open standard designed for human-readable data interchange. In JavaScript it is used for representing simple data structures and associative arrays, called objects. Despite its relationship to JavaScript, it is language-independent, with parsers available for many languages. <http://en.wikipedia.org/wiki/JSON> [dbpedia] [eco] [math] [simil] [speech] [standards]

K

K-means: k-means clustering aims to partition n observations into k clusters in which each observation belongs to the cluster with the nearest mean. http://en.wikipedia.org/wiki/K-means_clustering, http://home.dei.polimi.it/matteucc/Clustering/tutorial_html/AppletKM.html [sensors]

Keyhole Markup Language (KML): The Keyhole Markup Language (KML) is an XML language for expressing geographic annotation and visualization within Internet-based, two-dimensional maps and three-dimensional Earth browsers. http://en.wikipedia.org/wiki/Keyhole_Markup_Language [standards]

Kohana framework: The Kohana framework is a PHP5 framework for building web applications. <http://kohanaframework.org> [emergency]

L

Language model: A statistical language model assigns a probability to a sequence of words by means of a probability distribution. Language modeling is used in many natural language processing applications such as speech recognition, machine translation, part-of-speech tagging, parsing and information retrieval. http://en.wikipedia.org/wiki/Language_model [speech]

LaTeX: LaTeX is a document markup language and document preparation system for the TeX typesetting program. LaTeX is widely used in academia, in particular in technical and scientific domains. <http://en.wikipedia.org/wiki/LaTeX> [math]

Learning Object Metadata (LOM): Learning Object Metadata (LOM) is a data model, usually encoded in XML, describing a learning object and similar digital resources used to support learning and to make learning objects reusable, to aid their discovery, and to facilitate their interoperability, usually in the context of online learning management systems (LMS). http://en.wikipedia.org/wiki/Learning_object_metadata [math]

Linear classifier: A linear classifier decides on an object's characteristics to which class (or group) the object belongs to. It achieves this by making a classification decision based on the value of a linear combination of the characteristics. An object's characteristics are also known as feature values and are typically presented to the machine in a vector called a feature vector. http://en.wikipedia.org/wiki/Linear_classifier [simil]

Linked Data Semantic Distance (LSD): The LSD algorithm measures the distance of two objects on their direct and indirect linking in the linked data cloud. <http://swl.slis.indiana.edu/files/ldrec.pdf> [dbpedia] [simil]

Linked data: Linked data describes a method of publishing structured data so that it can be interlinked and become more useful. It builds upon standard Web technologies such as HTTP and URIs, and it extends them to share information in a way that can be read automatically by computers. The normal encoding format is RDF. Data from different sources can be connected and queried. http://en.wikipedia.org/wiki/Linked_data [dbpedia] [eco] [emergency] [math] [search] [sensors] [simil] [standards] [travel] [urban]

Linked Open Data (LOD): Linked Open Data (LOD) extends the Web with a data commons by publishing various open datasets as RDF and by setting RDF links between data items from different data sources. By September 2011 the datasets had grown to 31 billion RDF triples, interlinked by around 504 million RDF links. There is also an interactive visualization of the linked datasets to browse through the cloud. http://en.wikipedia.org/wiki/Linked_data [dbpedia] [eco] [emergency] [search] [sensors] [standards] [urban]

Linked Sensor Middleware (LSM): The Linked Sensor Middleware (LSM) is a platform that brings together the live real world sensed data and the Semantic Web. An LSM deployment provides many functionalities such as: wrappers for real-time data collection and publishing, a web interface for data annotation and visualization, and a SPARQL endpoint for querying unified Linked Stream Data and Linked Data. <http://code.google.com/p/deri-lsm/> [emergency]

LinkedGeoData: LinkedGeoData is an effort to add a spatial dimension to the Web of Data/Semantic Web. It uses the information collected by the OpenStreetMap project and makes it available as an RDF knowledge base according to the Linked Data principles. It interlinks these data with other knowledge bases in the Linking Open Data initiative. <http://linkedgeodata.org/About> [emergency] [urban]

Load shedding: Load shedding is the deliberate switching off of electrical supply to parts of the electricity network, and hence to the customers in those areas. This practice is a core part of the emergency management of all electricity networks. <http://www.thefreedictionary.com/load-shedding> [sensors]

Location awareness: Location awareness refers to devices that can passively or actively determine their location. Navigational instruments provide location coordinates, surveying equipment identifies location with respect to a well-known locational wireless communications device. Network location awareness (NLA) describes the location of a node in a network. http://en.wikipedia.org/wiki/Location_awareness [travel]

Location-based services (LBS): Location-based services (LBS), mostly on mobile devices, include specific controls for location and time data as control features in computer programs. LBS are used in a variety of contexts, such as health, indoor object search, entertainment, work, personal life, etc. http://en.wikipedia.org/wiki/Location-based_service [urban] [travel]

Lovins algorithm: The Lovins algorithm is a stemming algorithm. It is noticeably bigger and faster than the Porter algorithm, because of its very extensive endings list. <http://snowball.tartarus.org/algorithms/lovins/stemmer.html>, <http://www.cs.waikato.ac.nz/~eibe/stemmers/index.html> [simil]

M

Machine learning: A machine learns whenever it changes its structure, program, or data (based on its inputs or in response to external information) in such a manner that its expected future performance improves. For example, when the performance of a speech-recognition machine improves after hearing several samples of a person's speech, we can say that the machine has learned. <http://robotics.stanford.edu/~nilsson/MLBOOK.pdf> [dbpedia] [emergency] [simil] [sensors] [speech] [travel] [urban]

MapQuest: Free digital map server. <http://www.mapquest.com> [eco]

Mathematical Knowledge Management (MKM): Mathematical Knowledge Management aims at efficient, new techniques—based on sophisticated formal mathematics and software technology—to take advantage of the enormous amount of knowledge available in current mathematical sources and to organize mathematical knowledge in new ways, testing innovative theoretical and technological solutions for content-based systems, interoperability, management of machine understandable information, and the Semantic Web. <http://www.mkm-ig.org/index.html> [math]

Mathematics Subject Classification (MSC): The main purpose of the Mathematics Subject Classification (MSC) scheme is to help users find the items of present or potential interest to them as readily as possible—in products derived from the Mathematical Reviews Database (MRDB), in Zentralblatt MATH, or anywhere else where this classification scheme is used. <http://www.ams.org/mathscinet/msc/msc2010.html> [math]

MathJax: MathJax is an open source JavaScript display engine for mathematics that works in all modern browsers. <http://www.mathjax.org> [math]

MathML: MathML is a low-level specification for describing mathematics as a basis for machine to machine communication which provides a foundation for the inclusion of mathematical expressions in Web pages. <http://www.w3.org/Math/> [math]

MCDL: Mashup Component Description Language. Several approaches target MCDL: Gagne et al. (2006), Aghaee and Pautasso (2011) and <http://www.mmt.inf.tu-dresden.de/Forschung/Projekte/CRUISe/mcdl/> [eco]

Media mashup: A media mashup integrates (multi)media such as audio, video and augmented reality. [eco]

MetaObject Facility (MOF): The MetaObject Facility (MOF) is an Object Management Group (OMG) standard for model-driven engineering with use of the Unified Modeling Language (UML). http://en.wikipedia.org/wiki/Meta-Object_Facility [eco]

Microformat: Microformats are a set of simple open data formats built upon existing and widely adopted standards such as XML and XHTML. Examples are hCard and hCalendar. <http://microformats.org/about> [eco] [simil] [standards]

Micropost: A micropost is a brief post (or series of posts) to a personal blog on a microblogging web site such as Twitter. People can read microposts online or request that updates are delivered in real time to their desktop via instant messaging (IM) or sent to a mobile device via SMS text message. <http://www.netlingo.com/word/micropost.php> [urban]

Middleware: Middleware is computer software that provides services to software applications beyond those available from the operating system. <http://en.wikipedia.org/wiki/Middleware> [emergency] [search]

MIDI (Musical Instrument Digital Interface): MIDI (Musical Instrument Digital Interface) is an electronic musical instrument industry specification that allows electronic musical instruments, performance controllers, computers and related devices to communicate, as well as a hardware standard that guarantees compatibility between them. <http://en.wikipedia.org/wiki/MIDI> [speech] [standards]

MIME: Multipurpose Internet Mail Extensions (MIME) is an Internet standard for supporting text in character sets other than ASCII, non-text attachments, message bodies with multiple parts, and header information in non-ASCII character sets. <http://en.wikipedia.org/wiki/MIME> [standards]

MP3: MP3 (integrating MPEG-1 or MPEG-2 Audio Layer III) is a patented encoding format for digital audio which uses a form of lossy data compression. It is a common audio format for consumer audio storage, as well as a de facto standard of digital audio compression for the transfer and play-back of music on most digital audio players. <http://en.wikipedia.org/wiki/MP3> [standards]

MP4: MP4 (also called MPEG-4 Part 14, formally ISO/IEC 14496-14:2003) is a multimedia container format standard that is most commonly used to store digital video and digital audio streams, especially those defined by MPEG, but can also be used to store other data such as subtitles and still images. MP4 allows streaming over the Internet. A separate hint track includes streaming information in the file. http://en.wikipedia.org/wiki/MPEG-4_Part_14 [standards]

MPEG-1: MPEG-1 is a standard for lossy compression of video and audio. MPEG-1 is used in a large number of products and technologies. <http://en.wikipedia.org/wiki/MPEG-1> [standards]

MPEG-2: MPEG-2 is a standard for “the generic coding of moving pictures and associated audio information”. It describes a combination of lossy video compression and lossy audio data compression methods which permit storage and transmission of movies using currently available storage media and transmission bandwidth. MPEG-2 is widely used for digital television signals. <http://en.wikipedia.org/wiki/MPEG-2> [standards]

MPEG-4: MPEG-4 is a method of defining compression of audio and visual (AV) digital data. MPEG-4 is still a developing standard and is divided into a number of parts. It absorbs many of the features of MPEG-1 and MPEG-2 and other related standards, adding new features such as (extended) VRML support for 3D rendering, object-oriented composite files (including audio, video and VRML objects), support for externally specified Digital Rights Management and various types of interactivity. <http://en.wikipedia.org/wiki/MPEG-4> [standards]

MPEG: The Moving Picture Experts Group (MPEG) is a working group of ISO/IEC in charge of the development of standards for coded representation of digital audio and video and related data. <http://mpeg.chiariglione.org> [standards]

MPEGLA: MPEGLA is a packager of patent pools for standards and other technology platforms used in consumer electronics, as well as chemical, eCommerce, education, energy, environment, healthcare and biotechnology, manufacturing and materials, transportation, and wireless technology. <http://www.mpegla.com/main/Pages/About.aspx> [standards]

MRCpv2: The Media Resource Control Protocol (MRCP) is a communication protocol used by speech servers to provide various services (such as speech recognition and speech synthesis) to their clients. The MRCPv2 protocol allows client hosts to control media service resources such as speech synthesizers, recognizers, verifiers and identifiers residing in servers on the network. <http://www.iana.org/assignments/mrcpv2-parameters/mrcpv2-parameters.xml>, http://en.wikipedia.org/wiki/Media_Resource_Control_Protocol [speech]

Multimedia Messaging Service (MMS): The Multimedia Messaging Service (MMS) is a standard way to send messages that include multimedia content to and from mobile phones. It extends the core SMS (Short Message Service) capability that allows exchange of text messages only up to 160 characters in length. http://en.wikipedia.org/wiki/Multimedia_Messaging_Service [travel]

Multimodality: A multimodal system processes input and delivers output in several modalities, including text, image, speech and tactile information. [dbpedia] [math] [speech]

MySQL: MySQL is the world’s most used open source relational database management system (RDBMS) that runs as a server providing multi-user access to a number of databases. <http://en.wikipedia.org/wiki/MySQL>, <http://www.mysql.com> [search] [sensors]

N

N-gram: An n-gram is a contiguous sequence of n items from a given sequence of text or speech. An n-gram could be any combination of letters. However, the items in question can be phonemes, syllables, letters, words or base pairs according to the application. The n-grams typically are collected from a text or speech corpus. <http://en.wikipedia.org/wiki/N-gram> [emergency]

N-Quad: N-Quad is a format that extends N-Triples with context. Each triple in an N-Quads document can have an optional context value. <http://sw.deri.org/2008/07/n-quads/>, <http://en.wikipedia.org/wiki/N-gram> [dbpedia]

N-Triples: N-Triples is a basic text serialization of RDF graphs, with one line per RDF triple. <http://en.wikipedia.org/wiki/N-Triples> [dbpedia]

N3: N3 is a shorthand non-XML serialization of RDF models, designed with human-readability in mind: N3 is much more compact and readable than XML RDF notation. <http://en.wikipedia.org/wiki/Notation3> [search]

Named Entity Recognition (NER): Named Entity Recognition (NER) labels sequences of words in a text which are the names of things, such as person and company names, or gene and protein names. <http://nlp.stanford.edu/software/CRF-NER.shtml> [dbpedia]

National Center for Biomedical Ontology (NCBO): The goal of the National Center for Biomedical Ontology is to support biomedical researchers in their knowledge-intensive work, by providing online tools and a Web portal enabling them to access, review, and integrate disparate ontological resources in all aspects of biomedical investigation and clinical practice. A major focus involves the use of biomedical ontologies to aid in the management and analysis of data derived from complex experiments. <http://www.bioontology.org> [standards]

Natural Language Processing (NLP): Natural Language Processing (NLP) is an interdisciplinary field that uses computational methods to investigate the properties of human language and to model the cognitive mechanisms underlying the understanding and production of language (scientific focus), and to develop novel practical applications involving the intelligent processing of human language by computer (engineering focus). <http://nlp.shef.ac.uk> [dbpedia] [emergency] [speech] [urban]

Near Field Communication (NFC): Near Field Communication (NFC) is a set of standards for smartphones and similar devices to establish radio communication with each other by touching them together or bringing them into close proximity. Present and anticipated applications include contactless transactions such as Wi-Fi. Communication is also possible between an NFC device and an unpowered NFC chip, called a “tag”. NFC standards cover communications protocols and data exchange formats, and are based on existing radio-frequency identification (RFID) standards. http://en.wikipedia.org/wiki/Near_field_communication [sensors]

Nearest neighbor: Nearest neighbor is a method of calculating distances between clusters. The distances between possible nearest neighbors are calculated e.g. with the Euclidean or City-Block metrics. [sensors] [simil] [urban]

Neogeography: Movement in geography that puts cartography into the reach of non-professional users and developers. <http://en.wikipedia.org/wiki/Neogeography> [eco]

NIST: National Institute of Science and Technology. <http://www.nist.gov/> [standards]

O

OASIS: OASIS (Organization for the Advancement of Structured Information Standards) is a not-for-profit consortium that drives the development, convergence and adoption of open standards for the global information society. <https://www.oasis-open.org> [standards]

OAuth: OAuth is an open protocol to allow secure authorization in a simple and standard method for web, mobile and desktop applications. <http://oauth.net> [standards]

OBO: Open Biomedical Ontologies (OBO) is an effort to create controlled vocabularies for shared use across different biological and medical domains. OBO is a part of the resources of the U.S. National Center for Biomedical Ontology, where it will form a central element of the NCBO's BioPortal. The OBOFoundry collects biomedical ontologies. http://en.wikipedia.org/wiki/Open_Biomedical_Ontologies, http://en.wikipedia.org/wiki/OBO_Foundry [standards]

Observations & Measurements (O&M): Observations and Measurements (O&M) is an international standard which defines a conceptual schema encoding for observations, and for sampling features in observations. While the O&M standard was developed in the context of geographic information systems, the model is derived from generic patterns and is not limited to spatial information. O&M defines a core set of properties for an observation. It provides the response model for the Sensor Observation Service (SOS). http://en.wikipedia.org/wiki/Observations_and_Measurements [sensors]

OGC: Open Geospatial Consortium. <http://www.opengeospatial.org> [sensors] [standards]

Ogg Vorbis: Ogg Vorbis is an audio compression format. It is roughly comparable to other formats used to store and play digital music, such as MP3, VQF, AAC. It is different from these other formats because it is completely free, open, and unpatented. <http://www.vorbis.com/faq/#what> [standards]

OMDoc: OMDoc is a markup format and data model for Open Mathematical Documents. <https://trac.omdoc.org/OMDoc> [math]

Ontology: An ontology formally represents knowledge as a set of concepts within a domain, and the relationships among those concepts. In computer science and information science, an ontology formally represents knowledge as a set of concepts within a domain, and the relationships among those concepts. It can be used to describe the domain and to reason about the entities within that domain. [http://en.wikipedia.org/wiki/Ontology_\(information_science\)](http://en.wikipedia.org/wiki/Ontology_(information_science)) [eco] [emergency] [math] [search] [sensors] [standards] [travel] [urban]

OOI: Object of interest, cf. POI (Point of interest). [eco]

Open Directory Project (DMOZ): The Open Directory Project is the largest, most comprehensive human-edited directory of the Web. It is constructed and maintained by a vast, global community of volunteer editors. <http://www.dmoz.org/World/> [dbpedia] [search]

Open Mashup Alliance (OMA): The Open Mashup Alliance (OMA) is an organization charted to promote the adoption of mashup solutions in the enterprise through the evolution of enterprise mashup standards like an open enterprise mashup markup language. <http://www.openmashup.org> [eco]

OpenGL: OpenGL (Open Graphics Library) is a cross-language, multi-platform API for rendering 2D and 3D computer graphics. The API is typically used to interact with a graphics processing unit to achieve hardware-accelerated rendering. OpenGL is widely used in CAD, virtual reality, visualization, flight simulation, and video games. It is managed by the non-profit technology consortium Khronos Group. <http://www.opengl.org> [standards]

OpenID: OpenID is an open standard for user authentication in a decentralized manner, eliminating the need for services to provide their own ad hoc systems and allowing users to consolidate their digital identities. Users may create accounts with their preferred OpenID identity providers, and then use those accounts as the basis for signing on to any website which accepts OpenID authentication. <http://en.wikipedia.org/wiki/OpenID>, <http://openid.net> [standards] [travel]

OpenMath: OpenMath is a standard for representing mathematical objects with their semantics, allowing them to be exchanged between computer programs, stored in databases,

or published on the worldwide web. OpenMath provides a sublanguage for defining content dictionaries (CDs). <http://www.openmath.org> [**math**]

OpenStreetMap (OSM): OpenStreetMap (OSM) is a collaborative project to create a free editable map of the world. Rather than the map itself, the data generated by the OpenStreetMap project are considered its primary output. These data are available for use in both traditional applications, like Craigslist and Foursquare to replace Google Maps, and for more unusual roles, like replacing default data included with GPS receivers. <http://en.wikipedia.org/wiki/OpenStreetMap>, <http://www.openstreetmap.org> [**eco**] [**travel**] [**urban**]

Operations Research: Operations research, or operational research, deals with the application of advanced analytical methods to decision making. It is often considered to be a sub-field of mathematics. http://en.wikipedia.org/wiki/Operations_research [**urban**]

OSGi: The OSGi Alliance is a worldwide consortium of technology innovators that advances open specifications that enable the modular assembly of software built with Java technology. The alliance provides specifications, reference implementations, test suites and certification to foster a valuable cross-industry ecosystem. <http://www.osgi.org/Main/HomePage> [**dbpedia**] [**standards**]

OWL Horst reasoning: OWL Horst reasoning is a ruleset which incorporates RDFS and RDF entailment and extends that with some basic support for OWL. As such, it is very much an extension of Description Logic Programming (DLP). <http://answers.semanticweb.com/questions/9125/what-is-owl-horst-reasoning> [**urban**]

OWL: The OWL 2 Web Ontology Language (OWL 2) is an ontology language for the Semantic Web with formally defined meaning. OWL 2 ontologies comprise classes, properties, individuals, and data values. OWL 2 ontologies can be used along with information written in RDF, and OWL 2 ontologies themselves are primarily exchanged as RDF documents. <http://www.w3.org/TR/owl2-overview/> [**dbpedia**] [**eco**] [**standards**] [**urban**]

P

P2000: P2000 is a one-way communications network for pagers based on Motorola's FLEX-protocol in the Netherlands. The network is used by all emergency services and provides nationwide coverage. [http://en.wikipedia.org/wiki/P2000_\(network\)](http://en.wikipedia.org/wiki/P2000_(network)) [**emergency**]

Panoramio: Panoramio is a geolocation-oriented photo sharing website. Accepted photos uploaded to the site can be accessed as a layer in Google Earth and Google Maps, with new photos being added at the end of every month. The site's goal is to allow Google Earth users to learn more about a given area by viewing the photos that other users have taken at that place. The website is available in several languages. <http://www.panoramio.com>, <http://en.wikipedia.org/wiki/Panoramio> [**eco**] [**sensors**]

Parametric statistical model: A parametric model or parametric family or finite-dimensional model is a family of distributions that can be described using a finite number of parameters. http://en.wikipedia.org/wiki/Parametric_model [**sensors**]

Peer-to-peer (P2P): A peer-to-peer (P2P) computer network is one in which each computer in the network can act as a client or server for the other computers in the network, allowing shared access to various resources such as files, peripherals, and sensors without the need for a central server. P2P is a distributed application architecture that partitions tasks or workloads among peers. P2P networks can be used for sharing content such as audio,

video, data, or anything in digital format. <http://en.wikipedia.org/wiki/Peer-to-peer> [speech] [travel]

Personalization: Personalization technology enables the dynamic insertion, customization or suggestion of content in any format that is relevant to the individual user, based on the user's implicit behavior and preferences, and explicitly given details. Of particular interest is search personalization, i.e. of incorporating information about the user needs into query processing. <http://en.wikipedia.org/wiki/Personalization> [eco] [search] [travel]

Petri net: A Petri net (also known as a place/transition net or P/T net) is a mathematical modeling language for the description of distributed systems. A Petri net is a directed bipartite graph, in which the nodes represent transitions (i.e. events that may occur, signified by bars) and places (i.e. conditions, signified by circles). The directed arcs describe which places are pre- and/or postconditions for which transitions (signified by arrows) occur. Petri nets offer a graphical notation for stepwise processes that include choice, iteration, and concurrent execution, and they have an exact mathematical definition of their execution semantics, with a well-developed mathematical theory for process analysis. http://en.wikipedia.org/wiki/Petri_net [eco]

Phone: A phone is a realization of a phoneme. [speech]

Phoneme: A phoneme is the smallest segmental unit of sound employed to form meaningful contrasts between utterances (cf. “bill” and “kill”). It is an abstraction of a set (or equivalence class) of speech sounds (phones) which are perceived as equivalent to each other in a given language. <http://en.wikipedia.org/wiki/Phoneme> [speech]

Phonetic dictionary: Language model of word pronunciation, where each word present in the language model has an entry with one or more possible pronunciations (also called transcriptions). [speech]

Phonetics: Phonetics studies the sounds of human speech. It is concerned with the physical properties of speech sounds or signs (phones): their physiological production, acoustic properties, auditory perception, and neurophysiological status. <http://en.wikipedia.org/wiki/Phonetics> [speech]

PHP: PHP is an open source general-purpose server-side scripting language originally designed for Web development to produce dynamic Web pages. The code is interpreted by a Web server with a PHP processor module which generates the resulting Web page. PHP is installed on more than 20 million Web sites and 1 million Web servers. Software that uses PHP includes MediaWiki, Joomla, Wordpress, Concrete5, MyBB, and Drupal. <http://en.wikipedia.org/wiki/PHP> [eco] [emergency] [simil] [speech] [standards] [urban]

Physical mashup: A physical mashup may include sensor and actuator networks, embedded devices, electronic appliances and digitally enhanced everyday objects, so that they have their place in the physical world, and they are connected on the web with common techniques. [eco] [sensors]

Picasa: Picasa is a photo sharing platform. <http://picasa.google.com> [sensors]

Pipe(s): A pipe is a sequence of processes accepting inputs and delivering an output. [eco] [emergency] [speech] [urban] [travel]

Point of interest (POI): Points of interest (POI) are locations that may be important for somebody for some reason. Usually they are defined by their geographic longitude and latitude. [dbpedia] [eco] [emergency] [standards] [travel] [urban]

Polymath Project: The Polymath Project is a collaboration among mathematicians to solve important and difficult mathematical problems by coordinating many mathematicians to communicate with each other on finding the best route to the solution. http://en.wikipedia.org/wiki/Polymath_Project [math]

Polysemy: Polysemy is the capacity of a sign (e.g., a word, phrase, etc.) to have multiple related meanings. It is usually regarded as distinct from homonymy, in which the multiple meanings of a word may be unconnected or unrelated. <http://en.wikipedia.org/wiki/Polysemy> [search]

Portable Document Format (PDF): Portable Document Format (PDF) is a file format for platform-independent representation of documents. Each PDF file encapsulates a complete description of a fixed-layout flat document, including the text, fonts, graphics, and other information needed to display it. http://en.wikipedia.org/wiki/Portable_Document_Format [standards]

Programming by demonstration: Programming by demonstration (PbD) is an end-user development technique for teaching a computer or a robot new behaviors by demonstrating the task to transfer directly instead of programming it through machine commands. http://en.wikipedia.org/wiki/Programming_by_demonstration [eco]

Pronunciation: Pronunciation refers to the use the correct stress, rhythm and intonation of a word or word sequence in spoken language. Symbols from a phonetic alphabet (e.g. ARPA, IPA, SAMPA) are used to transcribe the pronunciation of a spoken utterance. <http://en.wikipedia.org/wiki/Pronunciation> [speech]

Prosody: Prosody is the rhythm, stress, and intonation of speech. Prosody may reflect various features of the speaker or the utterance: the emotional state of the speaker; the form of the utterance (statement, question, or command); the presence of irony or sarcasm; emphasis, contrast, and focus; or other elements of language that may not be encoded by grammar or choice of vocabulary. In terms of acoustics, the prosodics of oral languages involve variation in syllable length, loudness, and pitch. [http://en.wikipedia.org/wiki/Prosody_\(linguistics\)](http://en.wikipedia.org/wiki/Prosody_(linguistics)) [speech]

Protégé: Protégé is a free, open source ontology editor and knowledge base framework. The Protégé platform supports modeling ontologies via the Protégé-Frames and Protégé-OWL editors. Protégé ontologies can be exported into a variety of formats including RDFS, OWL, and XML Schema. <http://protege.stanford.edu> [standards]

Public Switched Telephone Network (PSTN): The Public Switched Telephone Network (PSTN) is the wired phone system over which landline telephone calls are made. The PSTN relies on circuit switching. To connect one phone to another, the phone call is routed through numerous switches operating on a local, regional, national or international level. <http://electronics.howstuffworks.com/telephone-country-codes1.htm> [eco] [speech]

Python: Python is a general-purpose, interpreted high-level programming language whose design philosophy emphasizes code readability. Python has a comprehensive standard library. Interpreters are available for many operating systems. <http://www.python.org> [eco] [simil] [speech] [standards]

Q

Quality of service (QoS): The quality of service (QoS) refers to several related aspects of telephony and computer networks that allow the transport of traffic with special requirements. http://en.wikipedia.org/wiki/Quality_of_service [dbpedia]

Query refinement: Query refinement improves an initial query. Search engines may also automatically refine queries. For instance, Google OneBox promotes a vertical search database near the top of the search result; offers a “did you mean” link with the correct

spelling near the top of the results; offers related search results in the search results. Some engines also suggest a variety of related search queries. Some search toolbars also aim to help searchers autocomplete their search queries by offering a list of most popular queries which match the starting letters that a searcher enters into the search box. <http://seotermglossary.com/query-refinement/> [search]

R

Radio Frequency Identification (RFID): Radio Frequency Identification (RFID) is the use of a wireless non-contact system that uses radio-frequency electromagnetic fields to transfer data from a tag attached to an object, for the purposes of automatic identification and tracking. Some tags require no battery and are powered and read at short ranges via magnetic fields (electromagnetic induction). Others use a local power source and emit radio waves (electromagnetic radiation at radio frequencies). The tag contains electronically stored information which can be read from up to several meters (yards) away. Unlike a bar code, the tag does not need to be within line of sight of the reader and may be embedded in the tracked object. http://en.wikipedia.org/wiki/Radio-frequency_identification [eco] [sensors]

Ranking: Ranking is the ordering of search results according to their assumed relevance, i.e. to what extent the topic of a result matches the topic of the query or information need. [dbpedia] [eco] [emergency] [search] [urban]

RDF Schema (RDFS): RDF Schema (RDFS) provides basic elements for the description of RDF ontologies/vocabularies, intended to structure RDF resources. A few RDFS components are included in the more expressive Web Ontology Language (OWL). http://en.wikipedia.org/wiki/RDF_Schema [standards]

RDFa: RDFa (Resource Description Framework in Attributes) provides a set of markup attributes to embed RDF graphs into HTML or XML. Thus, the existing visual, human-readable Web page content is augmented with machine-readable hints. <http://www.w3.org/TR/rdfa-core/>, <http://www.w3.org/TR/xhtml-rdfa-primer/> [eco] [math] [simil] [standards] [travel]

Recommendation system: Recommender systems or recommendation systems are a subclass of information filtering system that seek to predict the ‘rating’ or ‘preference’ that a users would give to an item (such as music, books, or movies) or social element (e.g. people or groups) they had not yet considered, using a model built from the characteristics of an item (content-based approaches) or the user’s social environment (collaborative filtering approaches). http://en.wikipedia.org/wiki/Recommender_system [dbpedia] [eco] [math] [search] [simil] [travel] [urban]

Recurrent Neural Network (RNN): A Recurrent Neural Network (RNN) is a class of neural network where connections between units form a directed cycle. This creates an internal state of the network which allows it to exhibit dynamic temporal behavior. Unlike feed-forward neural networks, RNNs can use their internal memory to process arbitrary sequences of inputs. This makes them applicable to tasks such as unsegmented connected handwriting recognition, where they have achieved the best known results. http://en.wikipedia.org/wiki/Recurrent_neural_network [urban]

Regular expression: A regular expression (‘regex’) provides a concise and flexible means to “match” (specify and recognize) strings of text, such as particular characters, words, or patterns of characters. http://en.wikipedia.org/wiki/Regular_expression [emergency] [simil]

Relax NG: Relax NG is a schema language for XML. It is simple, easy to learn, has both an XML syntax and a compact non-XML syntax, and some additional practical features. <http://relaxng.org> [standards]

Relevance feedback: Relevance feedback in information retrieval takes the results that are initially returned from a given query and submits them for relevance decision. Information about whether or not those results are relevant is used in a follow-up query. http://en.wikipedia.org/wiki/Relevance_feedback [search] [simil]

Representational State Transfer (REST): Representational State Transfer (REST) is a software architecture for distributed systems. REST facilitates the transaction between web servers by allowing loose coupling between different services. REST-style architectures consist of clients and servers. Clients initiate requests to servers; servers process requests and return appropriate responses. Requests and responses are built around the transfer of representations of resources. A resource can be essentially any coherent and meaningful concept that may be addressed. Key goals of REST include the scalability of component interactions, the generality of interfaces, an independent deployment of components, and intermediary components to reduce latency, enforce security and encapsulate legacy systems. http://en.wikipedia.org/wiki/Representational_state_transfer [dbpedia] [eco] [math] [sensors] [simil] [speech] [standards] [travel] [urban]

Request for Comments (RFC): Requests for Comments (RFC) documents are the official record for Internet specifications, protocols, procedures, and events of the Internet Engineering Task Force (IETF). http://en.wikipedia.org/wiki/Request_for_Comments [standards]

Resource Description Framework (RDF): The Resource Description Framework (RDF) data model is similar to entity-relationship or class diagrams, as it is based upon the idea of making statements about resources (in particular Web resources) in the form of subject-predicate-object expressions. These expressions are known as triples in RDF terminology. The subject denotes the resource, and the predicate denotes traits or aspects of the resource and expresses a relationship between the subject and the object. http://en.wikipedia.org/wiki/Resource_Description_Framework [dbpedia] [eco] [emergency] [math] [search] [sensors] [simil] [standards] [travel] [urban]

Reverse/inverse geocoding: Reverse/inverse geocoding is the opposite of geocoding: finding an associated textual location such as a street address, from geographic coordinates, or stating which geographical coordinates of a sensor node belong to the area. <http://en.wikipedia.org/wiki/Geocoding> [sensors]

RGB color: The RGB color model is an additive color model in which red, green, and blue light are added together in various ways to reproduce a broad array of colors. The main purpose of the RGB color model is for the sensing, representation, and display of images in electronic systems, such as televisions and computers. Before the electronic age, the RGB color model already had a solid theory behind it, based on human perception of colors. http://en.wikipedia.org/wiki/RGB_color_model [standards]

Rocchio algorithm: The Rocchio algorithm is based on a relevance feedback method from the Vector-Space-Model-based SMART Information Retrieval System around the year 1970. The algorithm assumes that most users have a general conception of which documents should be denoted as relevant or non-relevant. Therefore, the user's search query is revised to include an arbitrary percentage of relevant and non-relevant documents as a means of increasing the search engine's recall, and possibly the precision as well. The number of relevant and non-relevant documents allowed to enter a query is dictated by original query weights, related document weights and non-related document weights. http://en.wikipedia.org/wiki/Rocchio_algorithm [simil]

RSOE EDIS: Emergency and Disaster Information Service. <http://hisz.rsoc.hu/alertmap/index2.php> [emergency]

RSOE: Hungarian National Association of Radio Distress-Signalling and Infocommunications. <http://hisz.rsoc.hu> [emergency]

RSS Feed: RSS Rich Site Summary (Really Simple Syndication) is a family of web feed formats used to publish frequently updated works such as blog entries, news headlines, audio, and video in a standardized format. An RSS document (which is called a “feed”, “web feed”, or “channel”) includes full or summarized text, plus metadata such as publishing dates and authorship. <http://en.wikipedia.org/wiki/RSS> [eco] [emergency] [simil] [speech]

Ruby: According to the Ruby promoters, Ruby is a dynamic, open source programming language with a focus on simplicity and productivity. It has an elegant syntax that is natural to read and easy to write. <http://www.ruby-lang.org/en/> [simil] [speech]

Rule Markup Language (RuleML): The Rule Markup Language (RuleML) is a markup language for both forward (bottom-up) and backward (top-down) rules in XML for deduction, rewriting, and further inferential–transformational tasks. <http://en.wikipedia.org/wiki/RuleML> [sensors] [standards]

Rule-based language model: Rule-based language models complement the most widely used class of probabilistic language models, the so-called n-grams. N-grams only model short-range dependencies. Rule-based language models capture long-range dependencies that are present in natural language, such as subject–verb agreement. <http://www.tik.ee.ethz.ch/spr/publications/Kaufmann:12.pdf> [speech] [urban]

Rule: A rule normally is a condition–action rule, also called a production or production rule, of the form “if condition then action”. <http://www.cse.unsw.edu.au/~billw/aidict.html#firstC> [dbpedia] [eco] [emergency] [math] [sensors] [simil] [speech] [standards] [urban]

S

Sampling frequency: The sampling rate, sample rate, or sampling frequency defines the number of samples per unit of time (usually seconds) taken from a continuous signal to make it a discrete signal. For time-domain signals, the unit for sampling rate is Hertz (Hz). http://en.wikipedia.org/wiki/Sampling_rate [sensors] [speech]

SAWSDL: SAWSDL (Semantic Annotations for WSDL and XML Schema) defines a set of extension attributes for the Web Services Description Language (WSDL) and XML Schema definition language. SAWSDL defines how semantic annotation is accomplished using references to conceptual semantic models, e.g. ontologies. Semantic annotations for WSDL and XML Schema (SAWSDL) provide mechanisms by which concepts from the semantic models can be referred using annotations. <http://en.wikipedia.org/wiki/SAWSDL> [eco]

Scalable Vector Graphics (SVG): Scalable Vector Graphics (SVG) is an XML-based format for two-dimensional vector graphics, both static and dynamic (i.e., interactive or animated). SVG images and their behaviors are defined in XML text files. As XML files, SVG images can be created and edited with any text editor. All major modern web browsers support SVG to some degree. http://en.wikipedia.org/wiki/Scalable_Vector_Graphics [math] [standards]

Second Life: Second Life is an online world in which residents create virtual representations of themselves, called avatars, and interact with other avatars, places or objects. <http://computer.howstuffworks.com/internet/social-networking/networks/second-life.htm> [eco]

Semantic mashup: A semantic mashup applies semantic methods, both symbolic and probabilistic ones, such as semantic annotation, information extraction, or speech recognition. [eco]

Semantic Web for Earth and Environmental Terminology (SWEET): SWEET ontologies are written in the OWL ontology language. SWEET 2.3 is highly modular with 6,000 concepts in 200 separate ontologies. <http://sweet.jpl.nasa.gov> [emergency] [sensors]

Semi-supervised learning: Machine learning technique that makes use of both labeled and unlabeled data for training—typically a small amount of labeled data with a large amount of unlabeled data. http://en.wikipedia.org/wiki/Semi-supervised_learning [urban]

Sensor and Sensor Network (SSN) ontology: The Sensor and Sensor Network (SSN) ontology is a domain-independent and end-to-end model for sensing applications by merging sensor-focused (e.g. SensorML), observation-focused (e.g. Observation & Measurement) and system-focused views. <http://www.w3.org/2005/Incubator/ssn/XGR-ssn-20110628/> [sensors]

Sensor measurement: A good sensor measurement is sensitive to the measured property only, is insensitive to any other property likely to be encountered in its application, and does not influence the measured property. In practice systematic and random errors are observed. <http://en.wikipedia.org/wiki/Sensor> [sensors]

Sensor Observation Service (SOS): The Sensor Observation Service (SOS) is a web service to query real-time sensor data and sensor data time series and is part of the Sensor Web. The offered sensor data comprise descriptions of sensors themselves, which are encoded in the Sensor Model Language (SensorML), and the measured values in the Observations and Measurements (O&M) encoding format. The web service is defined by the Open Geospatial Consortium (OGC). http://en.wikipedia.org/wiki/Sensor_Observation_Service [eco] [sensors]

Sensor Planning Service (SPS): Standard web interface for queries that provide information about the capabilities of a sensor and how to task the sensor. <http://www.openeospatial.org/standards/sps> [eco] [sensors]

Sensor Web Enablement (SWE): The OGC's Sensor Web Enablement (SWE) standards enable developers to make all types of sensors, transducers and sensor data repositories discoverable, accessible and usable via the Web. <http://www.openeospatial.org/ogc/markets-technologies/swe> [sensors] [standards]

Sensor Web: The sensor web is a type of sensor network that is especially well suited for environmental monitoring. It is associated with a sensing system which heavily utilizes the web. OGC's Sensor Web Enablement (SWE) framework defines a suite of web service interfaces and communication protocols for sensor (network) communication. http://en.wikipedia.org/wiki/Sensor_web [sensors]

Sensor: A sensor is a converter that measures a physical quantity and converts it into a signal which can be read by an observer or by an instrument. <http://en.wikipedia.org/wiki/Sensor> [eco] [emergency] [sensors] [travel] [urban]

Service-oriented architectures (SOA): A service-oriented architecture (SOA) is a set of principles and methodologies for designing and developing software in the form of interoperable services. These services are well-defined business functionalities that are built as software components that can be reused for different purposes. SOA generally provides a way for consumers of services, such as web-based applications, to be aware of available SOA-based services. http://en.wikipedia.org/wiki/Service-oriented_architecture [eco] [speech]

Session: A session is a semi-permanent interactive information interchange, also known as a dialog, a conversation or a meeting, between two or more communicating devices, or between a computer and user. A session is set up or established at a certain point in time, and

torn down at a later point in time. [http://en.wikipedia.org/wiki/Session_\(computer_science\)](http://en.wikipedia.org/wiki/Session_(computer_science)) **[search] [speech] [travel]**

SHA: The Secure Hash Algorithm (SHA) is a family of cryptographic hash functions published by the National Institute of Standards and Technology (NIST) as a U.S. Federal Information Processing Standard (FIPS). http://en.wikipedia.org/wiki/Secure_Hash_Algorithm **[standards]**

Shapefile: A shapefile is a popular geospatial vector data format for geographic information systems software. Shapefiles spatially describe geometries: points, polylines, and polygons, representing e.g. water wells, rivers, and lakes, respectively. <http://en.wikipedia.org/wiki/Shapefile> **[urban]**

SIP address: A Voice IP SIP address is a unique identifier for each user on the network, just like a phone number identifies each user on the global phone network, or an e-mail address. It is also known as a SIP URI (Uniform Resource Identifier). <http://voip.about.com/od/sipandh323/g/What-Is-A-Sip-Address.htm> **[speech]**

SKOS: SKOS (Simple Knowledge Organization System) adapts Knowledge Organization Systems (KOS) such as thesauri, classification schemes, subject heading lists, and taxonomies within the framework of the Semantic Web. <http://www.w3.org/2004/02/skos/> **[math] [standards] [travel]**

Sliding windows: Sliding windows (“windowing”) is used by the Internet’s Transmission Control Protocol (TCP) as a method of controlling the flow of packets between two computers or network hosts. Sliding windows is a method by which multiple packets of data can be affirmed with a single acknowledgment. <http://searchnetworking.techtarget.com/definition/sliding-windows> **[sensors]**

SMS: Short Messaging Service. http://en.wikipedia.org/wiki/Short_Message_Service **[eco] [emergency] [speech] [travel]**

SMTP: Simple Mail Transfer Protocol (SMTP) is an Internet standard for electronic mail (e-mail) transmission across Internet Protocol (IP) networks. http://en.wikipedia.org/wiki/Simple_Mail_Transfer_Protocol **[standards]**

SOAP: SOAP (Simple Object Access Protocol) is a protocol specification for exchanging structured information in the implementation of web services in computer networks. It relies on XML for its message format, and usually relies on other application layer protocols, most notably HTTP and SMTP, for message negotiation and transmission. <http://en.wikipedia.org/wiki/SOAP> **[eco] [simil] [speech] [standards] [urban]**

Social awareness stream: Social awareness streams are an important feature of applications such as Twitter or Facebook. Personal awareness streams usually allow users to post short, natural-language messages as a personal stream of data that is being made available to other users. Social awareness stream are the aggregation of such personal awareness streams. They usually contain a set of short messages from different users. http://www.markusstrohmaier.info/documents/2010_SemSearch2010_Tweetonomies.pdf **[travel]**

SPARQL: SPARQL is an RDF query language that is able to retrieve and manipulate data stored in RDF format. SPARQL allows for a query to consist of triple patterns, conjunctions, disjunctions, and optional patterns. Implementations for multiple programming languages exist. There exist tools that allow one to connect and semi-automatically construct a SPARQL query for a SPARQL endpoint, and tools that translate SPARQL queries to other query languages, for example to SQL and to XQuery. <http://en.wikipedia.org/wiki/SPARQL> **[dbpedia] [eco] [emergency] [math] [search] [simil] [standards] [travel] [urban]**

Spectral techniques: Spectral techniques are used in applied mathematics and scientific computing to numerically solve certain differential equations, often involving the use of the Fast Fourier Transform. The idea is to write the solution of the differential equation as a sum

of certain “basis functions” (for example, as a Fourier series which is a sum of sinusoids) and then to choose the coefficients in the sum in order to satisfy the differential equation as well as possible. http://en.wikipedia.org/wiki/Spectral_method [sensors]

Speech Application Language Tags (SALT): Speech Application Language Tags (SALT) is an XML-based markup language that is used in HTML and XHTML pages to add voice recognition capabilities to web-based applications. SALT enables multimodal and telephony-enabled access to information, applications, and Web services from PCs, telephones, tablet PCs, and wireless personal digital assistants (PDAs). http://en.wikipedia.org/wiki/Speech_Application_Language_Tags [speech]

Speech mashup: A speech mashup is a web service that implements speech technologies, including automatic speech recognition and text-to-speech synthesis. [speech]

Spreading activation: Spreading activation is a method for searching associative networks, neural networks, or semantic networks. The search process is initiated by labeling a set of source nodes with weights or “activation” and then iteratively propagating or “spreading” that activation out to other nodes linked to the source nodes. Most often these “weights” are real values that decay as activation propagates through the network. http://en.wikipedia.org/wiki/Spreading_activation [emergency]

SQL: SQL (Structured Query Language) is a programming language designed for managing data in relational database management systems (RDBMS). <http://en.wikipedia.org/wiki/SQL> [search] [sensors] [standards]

SQLite: SQLite is a software library that implements a self-contained, serverless, zero-configuration, transactional SQL database engine. SQLite is said to be the most widely deployed SQL database engine in the world. The source code for SQLite is in the public domain. <http://www.sqlite.org> [standards]

Statistical language model (SLM): A statistical language model that can estimate the distribution of natural language as accurate as possible. A statistical language model (SLM) is a probability distribution $P(s)$ over strings S that attempts to reflect how frequently a string S occurs as a sentence. The n -gram model is the most widely used SLM today. <http://homepages.inf.ed.ac.uk/lzhang10/slm.html> [speech]

Statistical pattern recognition: Statistical pattern recognition is applied to new and emerging applications—such as data mining, web searching, multimedia data retrieval, face recognition, and cursive handwriting recognition—that require robust and efficient pattern recognition techniques. Statistical decision making and estimation are regarded as fundamental to the study of pattern recognition. [speech]

Statistical Unit Node Set (SUNS): SUNS is used in web-based machine learning. The Statistical Unit Node Set (SUNS) is defined for a statistical unit in a population. It includes all probabilistic nodes that correspond to all actual and potential statements in which the unit is either subject or object. A data matrix with triples from the SUNS can be used both for estimating SUNS in the whole data matrix (transduction) and for the SUNS in the population (induction). The learned probabilistic statements can be stored in the knowledge base as weighted triples using a number of approaches, e.g., using reification. http://www.brauer.informatik.tu-muenchen.de/~trespvoll/papers/tresp_irmles09_MaQLK.pdf [urban]

Stemming algorithm: A stemming algorithm is used for stemming, i.e. reducing inflected (or sometimes derived) words to their stem, base or root form, generally a written word form. The stem need not be identical to the morphological root of the word; it is usually sufficient that related words map to the same stem, even if this stem is not in itself a valid root. <http://en.wikipedia.org/wiki/Stemming> [simil]

Stop word: Stop words are words which are filtered out prior to, or after, processing of natural language data (text). http://en.wikipedia.org/wiki/Stop_words [simil]

Stream processing engines (SPE): Stream processing engines (SPE) are specifically designed to deal with streaming data. They perform SQL-like queries on the streaming data without necessarily storing anything. [sensors]

Streaming media: Streaming media is multimedia that is constantly received by and presented to an end-user while being delivered by a provider. http://en.wikipedia.org/wiki/Streaming_media [speech]

Support vector machines (SVMs): Support vector machines (SVMs) are supervised learning models with associated learning algorithms that analyze data and recognize patterns, used for classification and regression analysis. The basic SVM takes a set of input data and predicts, for each given input, which of two possible classes forms the output, making it a non-probabilistic binary linear classifier. Given a set of training examples, each marked as belonging to one of two categories, an SVM training algorithm builds a model that assigns new examples into one category or the other. http://en.wikipedia.org/wiki/Support_vector_machine [urban]

Syndication: Syndication makes website material available to multiple other sites. Most commonly, syndication refers to the distribution of web feeds. http://en.wikipedia.org/wiki/Web_syndication [simil] [standards]

Synonymy: Synonymy is a kind of semantic relation. Two words (or phrases) are synonyms when they have the same meaning. Terms with subtle differences between meanings are termed near-synonyms. http://www.iva.dk/bh/lifeboat_ko/CONCEPTS/synonymy.htm [emergency] [search] [simil] [standards]

T

TCP/IP: TCP/IP is the Internet protocol suite including the main protocols Transmission Control Protocol (TCP) and Internet Protocol (IP). TCP/IP provides end-to-end connectivity specifying how data should be formatted, addressed, transmitted, routed and received at the destination. It has four abstraction layers, each with its own protocols. http://en.wikipedia.org/wiki/Internet_protocol_suite [standards]

Telco mashups: Telecom mashups integrating web mashups with services distributed over company-own PSTN (Public Switched Telephone Network) telephone lines. [eco] [speech]

Text Encoding Initiative (TEI): The Text Encoding Initiative (TEI) is a consortium which collectively develops and maintains a standard for the representation of texts in digital form. Its chief deliverable is a set of guidelines which specify encoding methods for machine-readable texts, chiefly in the humanities, social sciences and linguistics. <http://www.tei-c.org/index.xml> [standards]

Text REtrieval Conference (TREC): The Text REtrieval Conference (TREC) supports research within the information retrieval community by providing the infrastructure necessary for large-scale evaluation of text retrieval methodologies. <http://trec.nist.gov> [search]

Text-to-Speech system (TTS): A Text-to-Speech (TTS) system converts normal language text into speech. [speech]

tf-idf: tf-idf, term frequency-inverse document frequency, is a numerical statistic which reflects how important a word is to a document in a collection or corpus. It is often used as a weighting factor in information retrieval and text mining. The tf-idf value increases

proportionally to the number of times a word appears in the document, but is offset by the frequency of the word in the corpus, which helps to control for the fact that some words are generally more common than others. <http://en.wikipedia.org/wiki/Tf-idf> [**travel**] [**dbpedia**]

Time series analysis: Time series analysis accounts for the fact that data points taken over time may have an internal structure (such as autocorrelation, trend or seasonal variation) that should be accounted for. <http://www.itl.nist.gov/div898/handbook/pmc/section4/pmc4.htm> [**sensors**]

Timestamp: A timestamp is a sequence of characters or encoded information identifying when a certain event occurred, usually giving date and time of day. <http://en.wikipedia.org/wiki/Timestamp> [**search**] [**sensors**] [**search**] [**urban**]

Topology: Topology analyzes such concepts as space, dimension, and transformation. <http://en.wikipedia.org/wiki/Topology> [**urban**]

Transverse Mercator coordinate system: A transverse Mercator projection is a Mercator projection whose cylinder touches the earth not at the equator, but along a meridian of longitude chosen depending on the area of the map, in order to reduce the scale error. <http://www.uwgb.edu/dutchs/fieldmethods/utmsystem.htm> [**urban**]

Tri-phone: A tri-phone is a sequence of three phonemes, so that one phone is put into context of the preceding and the following phone. [**speech**]

Turtle: Terse RDF Triple Language. <http://www.w3.org/TeamSubmission/turtle/> [**standards**]

Tversky model: The Tversky similarity model assumes that an object is represented by a set of features or attributes. Usually these are binary variables (e.g., voiced or unvoiced consonant) or parts that are present or not, e.g., eyes or tail), but they may also be ordered sets of properties like color or size. An important aspect of Tversky's model is that similarity depends not only on the proportion of features common to the two objects but also on their unique features. <http://www.pigeon.psy.tufts.edu/avc/dblough/theory.htm> [**simil**]

U

Ubiquitous computing: Ubiquitous computing (ubicom) is a post-desktop model of human-computer interaction in which information processing has been thoroughly integrated into everyday objects and activities. This paradigm is also described as pervasive computing, ambient intelligence or, more recently, everywhere. http://en.wikipedia.org/wiki/Pervasive_Computing [**dbpedia**] [**eco**] [**speech**] [**travel**] [**urban**]

UIMA: UIMA is an Apache open, industrial-strength, scalable and extensible platform for creating, integrating and deploying unstructured information management solutions from powerful text or multimodal analysis and search components. <http://uima.apache.org> [**dbpedia**]

UMTS: Universal Mobile Telecommunications System. http://en.wikipedia.org/wiki/Universal_Mobile_Telecommunications_System [**eco**] [**urban**]

Unified Modeling Language (UML): The Unified Modeling Language (UML) is a standardized general-purpose modeling language in the field of object-oriented software engineering. UML includes a set of graphic notation techniques to create visual models of object-oriented software-intensive systems. UML is a standard of both ISO and OMG. http://en.wikipedia.org/wiki/Unified_Modeling_Language [**eco**]

Unified Theory of Acceptance and Use of Technology (UTAUT): The Unified Theory of Acceptance and Use of Technology (UTAUT) aims to explain user intentions to use an

information system and subsequent usage behavior. The theory holds that four key constructs (performance expectancy, effort expectancy, social influence, and facilitating conditions) are direct determinants of usage intention and behavior. Gender, age, experience, and voluntariness of use are posited to mediate the impact of the four key constructs on usage intention and behavior. http://en.wikipedia.org/wiki/Unified_theory_of_acceptance_and_use_of_technology [eco]

Unit selection synthesis: The target utterance is created by determining the best chain of candidate units from the voice database (unit selection), typically using a specially weighted decision tree. http://en.wikipedia.org/wiki/Speech_synthesis [speech]

User experience (UX): User experience (UX) covers all aspects of the end-user interaction with the company, its services, and its products. The first requirement for an exemplary user experience is to meet the exact needs of the customer, without fuss or bother. Next comes simplicity and elegance that produce products that are a joy to own, a joy to use. True user experience goes far beyond giving customers what they say they want, or providing checklist features. In order to achieve high-quality user experience in a company's offerings there must be a seamless merging of the services of multiple disciplines, including engineering, marketing, graphical and industrial design, and interface design. <http://www.allaboutux.org/ux-definitions> [eco]

User interface (UI): The user interface is the space where the interaction between humans and machines occurs. Graphical user interfaces (GUIs) are frequent, but human-machine interaction can target all human senses offering e.g. tactile or audio interaction. Good user-oriented design is paramount. It ranges from simple buttons to virtual reality. http://en.wikipedia.org/wiki/User_interface [dbpedia] [eco] [emergency] [math] [search] [sensors] [standards] [travel]

User model: A user model represents a collection of personal data associated with a specific user. It is the basis for any adaptive changes to the system's behavior. http://en.wikipedia.org/wiki/User_modeling [math] [simil] [travel]

Ushahidi: Ushahidi is a non-profit tech company that specializes in developing free and open source software for information collection, visualization, and interactive mapping. <http://www.ushahidi.com/> [emergency]

V

Value Difference Metric (VDM): The Value Difference Metric (VDM) is designed to find reasonable distance values between nominal attribute values, largely ignoring continuous attributes and requiring discretization to map continuous values into nominal values. Updated versions of VDM exist. <http://axon.cs.byu.edu/~randy/jair/wilson1.html#Contents> [simil]

Vector space model: The Vector space model or term vector model is an algebraic model for representing text documents (and any objects, in general) as vectors of identifiers, such as, for example, index terms. It is used in information filtering, information retrieval, indexing, and relevancy rankings. Its first use was in the SMART Information Retrieval System. http://en.wikipedia.org/wiki/Vector_space_model [sensors] [simil]

Video mashup: Combination of multiple audiovisual sources. [eco]

Virtual Reality (VR): Virtual Reality (VR) is using computer technology to create a simulated, three-dimensional world that a user can manipulate and explore while feeling as if he were in that world. Scientists, theorists, and engineers have designed dozens of devices

and applications to achieve this goal. <http://electronics.howstuffworks.com/gadgets/other-gadgets/virtual-reality.htm> [eco] [standards]

Virtual sensor: Virtual sensors allow the abstraction of data collection away from a fixed set of physical objects. Virtual sensor values are computed based on indirect or abstract measurements derived from multiple, distributed, often heterogeneous data streams. [travel]

Voice-as-a-Service (VaaS): Speech web service for TTS (Text-to-Speech) or automatic speech recognition (ASR). [eco] [speech]

VoiceXML: VoiceXML (VXML) is the W3C's standard XML format for specifying interactive voice dialogs between a human and a computer. VoiceXML documents are interpreted by a voice browser. A common architecture is to deploy banks of voice browsers attached to the Public Switched Telephone Network (PSTN) to allow users to interact with voice applications over the telephone. <http://en.wikipedia.org/wiki/VoiceXML> [speech]

VoIP: Voice over IP (VoIP, or voice over Internet Protocol) is a technology used by IP telephony to transport phone calls. VoIP systems employ session control protocols to control the set-up and tear-down of calls as well as audio codecs which encode speech allowing transmission over an IP network as digital audio via an audio stream. VoIP is available on many smartphones and Internet devices. http://en.wikipedia.org/wiki/Voice_over_IP [speech]

VRML: VRML (Virtual Reality Modeling Language) is a standard file format for representing three-dimensional (3D) interactive vector graphics, designed particularly with the World Wide Web in mind. It has been superseded by X3D. <http://en.wikipedia.org/wiki/VRML> [standards]

W

W3C Semantic Sensor Network Incubator Group: The mission of the Semantic Sensor Network Incubator Group was to begin producing ontologies of sensors and sensor networks, and to develop semantic annotations of a key language used by services-based sensor networks. The group delivered a final report (<http://www.w3.org/2005/Incubator/ssn/XGR-ssn-20110628/>). <http://www.w3.org/2005/Incubator/ssn/> [sensors]

W3C time ontology: The OWL-Time ontology of W3C describes the temporal content of Web pages and the temporal properties of Web services. The ontology provides a vocabulary for expressing facts about topological relations among instants and intervals, together with information about durations, and about datetime information. <http://www.w3.org/TR/owl-time/> [sensors]

WATSON: AT&T speech recognition engine. <http://www.research.att.com/projects/WATSON> [speech]

Waveform Audio (WAV): Waveform Audio File Format (WAV) is a Microsoft and IBM audio file format standard for storing an audio bitstream. Though a WAV file can hold compressed audio, the most common WAV format contains uncompressed audio in the linear pulse code modulation (LPCM) format. <http://en.wikipedia.org/wiki/WAV> [standards]

Web Feature Service Interface Standard (WFS): The Web Feature Service Interface Standard (WFS) of OGC provides an interface allowing requests for geographical features across the web using platform-independent calls. One can think of geographical features as the “source code” behind a map, whereas the WMS interface or online mapping portals like Google Maps return only an image, which end-users cannot edit or spatially analyze. The XML-based GML furnishes the default payload-encoding for transporting the geographic features, but other formats like shapefiles can also serve for transport. http://en.wikipedia.org/wiki/Web_Feature_Service [emergency]

Web Map Service Interface Standard (WMS): The OpenGIS Web Map Service Interface Standard (WMS) provides a simple HTTP interface for requesting geo-registered map images from one or more distributed geospatial databases. A WMS request defines the geographic layer(s) and area of interest to be processed. The response to the request is one or more geo-registered map images (returned as JPEG, PNG, etc.) that can be displayed in a browser application. <http://www.opengeospatial.org/standards/wms> [standards]

Web Mashup Scripting Language (WMSL): The Web Mashup Scripting Language (WMSL) enables an end-user working from his browser, e.g. not needing any other infrastructure, to quickly write mashups that integrate any web services on the Web. The end-user accomplishes this by writing a web page that combines HTML, metadata in the form of mapping relations, and a small piece of code, or script. The mapping relations enable not only the discovery and retrieval of the WMSL pages, but also affect a new programming paradigm that abstracts many programming complexities from the script writer. http://www.mitre.org/work/tech_papers/tech_papers_07/07_0393/ [eco]

Web of Things (WoT): The Web of Things (WoT) is a computing concept that describes a future where everyday objects are fully integrated with the Web. The prerequisite for WoT is for the “things” to have embedded computer systems that enable communication with the Web. Such smart devices would then be able to communicate with each other using existing Web standards. <http://www.techopedia.com/definition/26834/web-of-things-wot> [eco] [sensors] [standards]

Web scraping: Web scraping (web harvesting or web data extraction) is a computer software technique of extracting information from websites. Usually, such software programs simulate human exploration by either implementing the low-level Hypertext Transfer Protocol (HTTP), or by embedding a fully fledged web browser. http://en.wikipedia.org/wiki/Web_scraping [simil]

Web service: A Web service is a method of communication between two electronic devices over the World Wide Web. http://en.wikipedia.org/wiki/Web_service [dbpedia] [eco] [math] [sensors] [speech] [standards] [urban] [travel]

Web Services Description Language (WSDL): The Web Services Description Language (WSDL) is an XML-based language that is used for describing the functionality offered by a Web service. A WSDL description of a web service (also referred to as a WSDL file) provides a machine-readable description of how the service can be called, what parameters it expects, and what data structures it returns. WSDL is often used in combination with SOAP and an XML Schema to provide Web services over the Internet. http://en.wikipedia.org/wiki/Web_Services_Description_Language [eco] [speech]

Web3D: Web3D refers to all interactive 3D content which are embedded into web pages html, and that we can see through a web browser. <http://en.wikipedia.org/wiki/Web3D> [standards]

WebCGM: WebCGM is a profile of the CGM standard (ISO/IEC 8632) that describes how CGM vectors, raster, and hybrid graphics are to be used on the Web. WebCGM 2.1 is a W3C recommendation. <https://www.oasis-open.org/committees/cgmo-webcgm/faq.php>, <http://www.w3.org/TR/2010/REC-webcgm21-20100301/> [standards]

WebGL: WebGL (Web Graphics Library) is a JavaScript API for rendering interactive 3D graphics and 2D graphics within any compatible web browser without the use of plugins. <http://en.wikipedia.org/wiki/WebGL> [standards]

WebRTC: WebRTC (Web Real-Time Communication) is an API definition being drafted by the World Wide Web Consortium (W3C). The goal of WebRTC is to enable applications such as voice calling, video chat and P2P file sharing without plugins. <http://en.wikipedia.org/wiki/WebRTC> [speech]

Weighted finite-state machine (FSM): A finite-state transducer is a finite automaton whose state transitions are labeled with both input and output symbols. A weighted transducer puts weights on transitions in addition to the input and output symbols. Weights may encode probabilities, durations, penalties, or any other quantity that accumulates along paths to compute the overall weight of mapping an input sequence to an output sequence. Weighted transducers are thus a natural choice to represent the probabilistic finite-state models prevalent in speech processing. <http://www.cs.nyu.edu/~mohri/pub/csl01.pdf> [speech]

WGS84 coordinate system: The World Geodetic System is a standard for use in cartography, geodesy, and navigation. Its latest revision is WGS84 (dating from 1984 and last revised in 2004), which was valid up to about 2010. http://en.wikipedia.org/wiki/World_Geodetic_System [urban]

Widget: A widget is a small application with presentation format that can be installed and executed within a web page by an end-user. Widgets are typically created in dynamic HTML, JavaScript, or Adobe Flash. http://en.wikipedia.org/wiki/Web_widget [eco] [emergency] [math] [search] [sensors] [travel]

Windows Media Audio (WMA): Windows Media Audio (WMA) is an audio data compression technology developed by Microsoft. The name can be used to refer to its audio file format or its audio codecs. It is a proprietary technology that forms part of the Windows Media framework. http://en.wikipedia.org/wiki/Windows_Media_Audio [standards]

Wolfram Alpha: Wolfram Alpha is a computational knowledge engine that does not search the web, but performs dynamic computations based on a vast collection of built-in data, algorithms, and methods. Wolfram Alpha's aim is to collect and curate all objective data and to implement every known model, method, and algorithm. <http://www.wolframalpha.com/about.html> [math]

World Wide Web Consortium (W3C): The World Wide Web Consortium (W3C) is an international community that develops open standards to ensure the long-term growth of the Web. <http://www.w3.org> [dbpedia] [math] [sensors] [speech] [standards] [travel]

X

X3D: X3D is a royalty-free open standards file format and run-time architecture to represent and communicate 3D scenes and objects using XML. X3D has a rich set of componentized features that can be tailored for use in engineering and scientific visualization, CAD and architecture, medical visualization, training and simulation, multimedia, entertainment, education, and more. <http://www.web3d.org/realtime-3d/x3d/what-x3d/> [standards]

XHTML: XHTML (Extensible HyperText Markup Language) is the XML-compliant encoding of HTML. <http://www.w3.org/TR/html5/the-xhtml-syntax.html#the-xhtml-syntax> [math] [speech] [standards]

XML Schema (XSD): An XML Schema (XSD) describes the structure of an XML document. In comparison with a DTD, an XML Schema (coded in XML) enables a more detailed document definition. The current XML Schema 1.1 is a superset of XML Schema 1.0. <http://www.w3schools.com/schema/default.asp>, <http://www.xfront.com/xml-schema-1-1/> [standards]

XML: The Extensible Markup Language (XML) is a markup language created to structure, store, and transport data by defining a set of rules for encoding documents in a format that is both human-readable and machine-readable. XML is widely used for the representation of arbitrary data structures, for example in web services. Hundreds of XML-based languages have been developed, including RSS, Atom, SVG, MathML, XHTML,

and SOAP. XML has also been employed as the base language for communication protocols, such as XMPP. <http://en.wikipedia.org/wiki/XML>, <http://www.w3.org/XML/> [**dbpedia**] [**eco**] [**math**] [**search**] [**sensors**] [**simil**] [**speech**] [**standards**] [**travel**] [**urban**]

XMPP: XMPP is the Extensible Messaging and Presence Protocol, a set of open technologies for instant messaging, presence, multi-party chat, voice and video calls, collaboration, lightweight middleware, content syndication, and generalized routing of XML data. <http://xmpp.org/about-xmpp/technology-overview/> [**standards**]

XQuery: XQuery is a query and functional programming language that is designed to query collections of XML data. The language is based on the XQuery and XPath Data Model (XDM) which uses a tree-structured model of the information content of an XML document, containing seven kinds of nodes: document nodes, elements, attributes, text nodes, comments, processing instructions, and namespaces. <http://en.wikipedia.org/wiki/XQuery>, <http://www.w3.org/XML/Query/> [**simil**] [**standards**]

XSLT: XSLT is a language for transforming XML documents into other XML documents. <http://www.w3.org/TR/xslt> [**standards**] [**math**]

XUL: XUL (XML User Interface Language) is a user interface markup language implemented as an XML dialect; it allows for graphical user interfaces to be written in a similar manner to Web pages. <http://en.wikipedia.org/wiki/XUL> [**math**]

XULRunner: XULRunner is a run-time environment developed by the Mozilla Foundation to provide a common back-end for XUL-based applications. <http://en.wikipedia.org/wiki/XULRunner> [**math**]

Y

Yahoo! Pipes: Pipes is a powerful composition tool to aggregate, manipulate, and mashup content from around the web. Like Unix pipes, simple commands can be combined together to create output that meets user needs. <http://pipes.yahoo.com/pipes/> [**eco**] [**speech**]

Z

Zentralblatt MATH: Zentralblatt MATH is a service providing reviews and abstracts for articles in pure and applied mathematics, published by Springer Science+Business Media. It is a major international reviewing service which covers the entire field of mathematics. It uses the Mathematics Subject Classification codes for organizing their reviews by topic. http://en.wikipedia.org/wiki/Zentralblatt_MATH [**math**]