TOP 10

CITED PAPER

International Journal of

Web &Semantic Technology (IJWesT)

ISSN: 0975 - 9026 (Online) 0976- 2280 (Print)

http://www.airccse.org/journal/ijwest/ijwest.html

Citation Count - 366

Evolution of the World Wide Web : From Web 1.0 to Web 4.0

Sareh Aghaei, Mohammad Ali Nematbakhsh and Hadi Khosravi Farsani,

University of Isfahan, Iran

ABSTRACT

The World Wide Web as the largest information construct has had much progress since its advent. This paper provides a background of the evolution of the web from web 1.0 to web 4.0. Web 1.0 as a web of information connections, Web 2.0 as a web of people connections, Web 3.0 as a web of knowledge connections and web 4.0 as a web of intelligence connections are described as four generations of the web in the paper.

KEYWORDS

Web 1.0, Web 2.0, Web 3.0, Web 4.0.

For More Details :-http://airccse.org/journal/ijwest/papers/3112ijwest01.pdf

Volume Link :-http://www.airccse.org/journal/ijwest/vol3.html

REFERENCES

[1] Brian, Getting, (2007) "Basic Definitions: Web 1.0, Web. 2.0, Web 3.0", <http://www.practicalecommerce.com/articles/464-Basic-Definitions-Web-1-0-Web-2-0-Web-3-0>.

[2] Christian, Bizer & Tom, Heath & Tim, Berners-Lee, (2009) "LinkedData-The Story So Far", Journal Semantic Web and Information Systems.

[3]W3C,(1999)"ResourceDescriptionFramework(RDF)ModelandSyntaxSpecification", <http://www.w3.org/TR/1999/REC-rdf-syntax-19990222/.>.

[4]SeanB,Palmer,(2001),"TheSemanticWeb:AnIntroduction" <http://infomesh.net/2001/swintro/>.

[5]Ossi,Nykänen(2003),"SemanticWeb:Definition"<http://www.w3c.tut.fi/talks/2003/0331umediaon/slide6-0.html>.

[6]Norasak,Suphakorntanakit(2008),"Web3.0",

<http://webuser.hs furtwangen.de/~heindl/ebte-08ssweb-20-Suphakorntanakit.pdf>.

[7]TimBerners-Lee.TheWorldWideWeb:Averyshortpersonalhistory,In: <http://www.w3.org/People/Berners-Lee/ShortHistory.html>, 1998.

[8] Christian, Fuchs & Wolfgang, Hofkirchner & Matthias, Schafranek & Celina, Raffl & Marisol, Sandoval & Robert, Bichler (2010), "Theoretical Foundations of the Web: Cognition, International Journal of Web & Semantic Technology (IJWesT) Vol.3, No.1, January 2012 9 Communication, and Co-Operation. Towards an Understanding of Web 1.0, 2.0, 3.0", Journal: Future Internets.

[9] Maged,N.Kamel Boulos&Steve, Wheeler (2007), "The emerging Web 2.0 social software: an enabling suite of sociable technologies in health and health care education", Health Information and Libraries Journal, Pp: 2-23.

[10] San, Murugesan (2007), "Understanding Web 2.0", Journal IT Professional.

[11] Jane, Greenberg & Stuart, Sutton & D. Grant, Campbell (2003), "Metadata: A Fundamental Component of the Semantic Web", Bulletin of the American Society for Information Science and Technology Volume 29, Issue 4, pages 16–18.

[12] Hamed, Hassanzadeh & MohammadReza, Keyvanpour (2011), "A MACHINE LEARNING BASED ANALYTICAL FRAMEWORK FOR SEMANTIC ANNOTATION REQUIREMENTS", International Journal of Web & Semantic Technology Vol.2, No.2.

[13] Sudhir, Batra (2006), "AJAX-Asynchronous Java Script and XML", ITS - Information Technology and Systems Management.

[14]Nova,Spivack(2011),"Web3.0:TheThirdGenerationWebisComing", http://lifeboat.com/ex/web.3.0

[15] Tim, Berners-Lee & Christian, Bizer & Tom, Heath & Kingsley, Idehen (2008), "Linked Data on the Web", 17th International World Wide Web Conference.

[16] Oktie, Hassanzadeh (2008), "Introduction toSemantic WebTechnologies & Linked Data",m http://www.cs.toronto.edu/~oktie/slides/web-of-data-intro.pdf

[17] W3C, (2004), "The Unicode Consortium", http://www.unicode.org/.

[18] Tim, Berners-Lee & James, Hendler & Ora, Lassila (2001), "The SemanticWeb",The Scientific American, vol. 5(1).

[19] Aurona J, Gerber & Andries, Barnard & Aletta Johanna, van der Merwe (2007), "Towards a semantic web layered architecture", the 25th conference on IASTED International Multi-Conference.

[20] Mathieu d', Aquin & Enrico, Motta & Marta, Sabou & Sofia, Angeletou & Laurian, Gridinoc & Vanessa, Lopez & Davide, Guidi (2008), "TowardaNewGenerationof Semantic Web Applications", IEEE Intelligent Systems, 23(3):20-28.

[21]Hemnath(2010),"Web4.0-ANewWebTechnology", http://websitequality.blogspot.com/2010/01/web-40-new-web-technology.html/.

[22] Haytham,Al-Feel & M.A.Koutb & Hoda Suoror (2009), "Toward An Agreement on Semantic Web Architecture", Proceedings of World Academy of Science, Engineering And Technology Volume 37 January 2009, ISSN 2070-3740.

[23] Ron, Callari (2009), "Web 4.0,Trip Down the Rabbit Hole or Brave New World?", http://www.zmogo.com/web/web-40trip-down-the-rabbit-hole-or-brave-new-world/.

[24] Tim, Berners-Lee & Mark, Fischetti (2000), "Weaving the Web: The Past, Present and Future of the World Wide Web by its Inventor", London, Texere.

[25]Dan,Farber(2007),"FromsemanticWeb(3.0)totheWebOS(4.0)", http://www.zdnet.com/blog/btl/from-semantic-web-30-to-the-webos-40/4499/.

[26]Tim,Berners-Lee(2006),"LinkedData–DesignIssues",
http://www.w3.org/DesignIssues/LinkedData.html/.

[27] Marcus, Cake (2008), "Web 1.0, Web 2.0, Web 3.0 and Web 4.0 explained", http://www.marcuscake.com/economic-development/internet-evolution/.

[28] Tom, Franklin & Mark, van Harmelen (2007), "Web 2.0 for Content for Learning andTeachinginHigherEducation",http://www.jisc.ac.uk/media/documents/programmes/digitalrepositories/web2- contentlearning-and-teaching.pdf/.

[29] Alexander, Ritt & Philipp, Hörtler (2008), "Security Aspects in Web 2.0 Mashup Systems",Technology,Altenbergerstrabe69,4020Linz,Austria,
http://www.fim.unilinz.ac.at/lva/SE_Netzwerke_und_Sicherheit_Security_Considerations_in_Intercon_Networks/semH. pdf/.

Citation Count –163

Ant colony Optimization: A Solution of Load balancing in Cloud

Ratan Mishra and Anant Jaiswal, Amity school of computer Science, India

Abstract

As the cloud computing is a new style of computing over internet. It has many advantages along with some crucial issues to be resolved in order to improve reliability of cloud environment. These issues are related with the load management, fault tolerance and different security issues in cloud environment. In this paper the main concern is load balancing in cloud computing. The load can be CPU load, memory capacity, delay or network load. Load balancing is the process of distributing the load among various nodes of a distributed system to improve both resource utilization and job response time while also avoiding a situation where some of the nodes are heavily loaded while other nodes are idle or doing very little work. Load balancing ensures that all the processor in the system or every node in the network does approximately the equal amount of work at any instant of time. Many methods to resolve this problem has been came into existence like Particle Swarm Optimization, hash method, genetic algorithms and several scheduling based algorithms are there. In this paper we are proposing a method based on Ant Colony optimization to resolve the problem of load balancing in cloud environment.

Keywords:

Cloud computing, Load balance, Ant colony optimization, Swarm intelligence

For More Details :-http://airccse.org/journal/ijwest/papers/3212ijwest03.pdf

Volume Link :-http://www.airccse.org/journal/ijwest/vol3.html

REFERENCES

[1] Wayne Jansen, Timothy Grance, "Guidelines on Security and Privacy in Public Cloud Computing", National Institute of Standards and Technology Gaithersburg, January 2011.

[2] Jeep Ruiter, MartijnWarnier, "Privacy Regulations for Cloud Computing", Faculty of Sciences, VU University Amsterdam International Journal of Web & Semantic Technology (IJWesT) Vol.3, No.2, April 2012 50

[3] DanchoDanchev,"Building and Implementing a successful Information Security Policy" windowsecurity.com- Windows Security Resources for IT admins.

[4] David Escalante and Andrew J. Korty, Cloud Services: Policy and Assessment, EDUCAUSE Review, vol. 46, no. 4 (July/August 2011)

[5] Richard N. Katz, "Looking at Clouds from All Sides Now", EDUCAUSE Review, vol. 45, no. 3 (May/June 2010): 32-45

[6] Anthony T.Velte, Toby J.Velte, Robert Elsenpeter, Cloud Computing A Practical Approach, TATA McGRAW-HILL Edition 2010.

[7]Martin Randles, David Lamb, A.Taleb-Bendiab,AComparative Study into Distributed Load Balancing Algorithms for Cloud Computing, 2010 IEEE 24th International Conference on Advanced Information Networking and Applications Workshops.

[8]MladenA.Vouk,CloudComputingIssues,ResearchandImplementations, Proceedings of the ITI 2008 30th Int. Conf. on Information Technology Interfaces, 2008, June 23-26.

[9] Ali M. Alakeel, A Guide to Dynamic Load Balancing in Distributed Computer Systems, IJCSNS International Journal of Computer Science and Network Security, VOL.10 No.6, June 2010.

[10] ibm.com/press/us/en/pressrelease/22613.wss

[11] http://www.amazon.com/gp/browse.html?node=201590011

[12] Martin Randles, EnasOdat, David Lamb, Osama Abu- Rahmeh and A. Taleb-Bendiab, "AComparativeExperimentin Distributed Load Balancing", 2009 Second International Conference on Developments in eSystems Engineering.

[13] Peter S. Pacheco, ”Parallel Programming with MPI”, Morgan Kaufmann Publishers Edition 2008

[14] MequanintMoges, Thomas G.Robertazzi, ”Wireless Sensor Networks: Scheduling for Measurement and Data Reporting”, August 31, 2005

[15] Ali M. Alakeel, A Guide to Dynamic Load Balancing in Distributed Computer Systems,IJCSNSInternationalJournalofComputerScienceandNetwork Security,VOL.10 No.6, June 2010.

[16] Martin Randles, EnasOdat, David Lamb, Osama Abu- Rahmeh and A. Taleb-Bendiab, ”AComparativeExperiment inDistributed Load Balancing”, 2009 Second International Conference on Developments in eSystems Engineering.

[17]Fourth International Conference on Semantics, Knowledge and Grid” Load Balancing in Nondedicated Grids Using Ant Colony Optimization”.

[18] 9th IEEE/ACMInternationalSymposium on Cluster Computing and the Grid.,2011

[19]AnthonyT.Velte,TobyJ.Velte,RobertElsenpeter,CloudComputingA PracticalApproach, TATA McGRAW-HILL Edition 2010.

Citation Count –128

The Cloudy Future Of Government IT: Cloud Computing and The Public Sector Around The World

David C. Wyld,

Southeastern Louisiana University, LA USA

ABSTRACT

Cloud computing is fast creating a revolution in the way information technology is used and procured by organizations and by individuals. In this article, we examine what cloud computing is and the importance of this new model of computing. We then examine non-military uses of cloud computing in governments across the globe, from the Unites States to Europe and Asia. Then, we look at the resource – people and computing – issues involved in shirting to cloud computing. The author then presents his six-step "Cloud Migration Strategy" for governmental agencies to shift to cloud computing. Finally, we look "over the horizon" to the implications for public sector organizations and the information technology community as the cloud computing revolution progresses.

KEYWORDS

Cloud computing, information technology, public sector, government, workforce, change

For More Details :-http://airccse.org/journal/ijwest/papers/0101w1.pdf

Volume Link :-http://www.airccse.org/journal/ijwest/vol1.html

REFERENCES

[1]Special report examines the realities and risks of cloud computing, June 26, 2008. [Online]. Available: http://www.gartner.com/it/page.jsp?id=707508 [Accessed: February 24, 2009].

[2]C. Johnson,"CIO technology survey results," CIO, October 1, 2009. [Online]. Available: http://www.cio.com/article/503874/CIO_Technology_Survey_Results [Accessed: October 30, 2009].

[3] L. Ulanoff, "Google's cloud: 8 key questions," PC Magazine, February 4, 2009. [Online]. Available: http://www.pcmag.com/article2/0,2817,2340325,00.asp [Accessed: March 10, 2009].

[4] C. Anderson, Free: The future of a radical price. New York: Hyperion, April 2009. International Journal of Web & Semantic Technology (IJWesT), Vol 1, Num 1, January 2010 16

[5] Knowledge@Wharton, "How about free?: The price point that is turning industries on their heads," Knowledge@Wharton, University of Pennsylvania, March 4, 2009. [Online]. Available: http://knowledge.wharton.upenn.edu/article.cfm?articleid=2169 [Accessed: March 10, 2009].

[6]D.C.Wyld,Movingtothecloud:Anintroductiontocloudcomputingingovernment.Washington, DC: IBM Center for the Business of Government, November 2009.

[7] S. Ferguson, "Gartner says IT spending will decline 4 percent in 2009," eWeek, March 31,2009.[Online].Available:http://www.eweek.com/index2.php option=content&task=view&id=52598&pop=1&hide_ads=1 &page=0&hide_js=1 [Accessed: April 2, 2009].

[8] J. Davis, "Gartner and Forrester now forecast 2009 decline in IT spending," Channel Insider,April1,2009.[Online].Available: http://www.channelinsider.com/c/a/News/Gartner-andForrester-Now-Forecast-2009 Decline-in-IT-Spending-204121/ [Accessed: April 10, 2009].

[9] J. Davis, "Gartner: Outsourced IT services prices could fall 20%," Channel Insider, March 27, 2009. [Online]. Available: http://www.channelinsider.com/c/a/News/Gartner-Outsourced-ITServices-Prices-Could-Fall-20-145259/ [Accessed: April 10, 2009].The client-server model: Not dead yet

[10] M.V. Copeland, "The client-server model: Not dead yet," Fortune, February 16, 2009. [Online].Available:http://money.cnn.com/2009/02/16/technology/copeland_oracle.fortune/index.htm [Accessed: July 23, 2009].

[11] M. O'Gara, "Washington itching to take the lead on cloud computing," SOA Journal, July 31, 2009. [Online]. Available: http://govit.sys-con.com/node/1055764 [Accessed: August 4, 2009].

[12] IDC, Press Release: IDC Finds Cloud Computing Entering Period of Accelerating Adoption and Poised to Capture IT Spending Growth Over the Next Five Years, October 20, 2008. [Online]. Available: http://www.idc.com/getdoc.jsp?containerId=prUS21480708 [Accessed: January 24, 2009].

[13] S. Hamm, "How cloud computing will change business," Business Week, June 4, 2009. [Online].Available:http://www.businessweek.com/print/magazine/content/09_24/b4135042942270.htm [Accessed: July 18, 2009].

[14] S. Campbell, "Federal CIO: Government needs to rethink technology for 21st Century," ChannelWeb, April 30, 2009. [Online]. Available: http://www.crn.com/government/217201051;jsessionid=J24L30FS4QIG2QSNDLPSKH0CJUN N2JVN [Accessed: May 5, 2009].

[15] G. Nagesh, "Agencies predicted to move to cloud computing cautiously," NextGov, April 22, 2009. [Online]. Available: http://www.nextgov.com/nextgov/ng_20090422_7939.php [Accessed: May 30, 2009].

[16] G. Nagesh, "USA.gov's successful shift to cloud computing could become the model," NextGov, September 29, 2009. [Online]. Available: http://www.nextgov.com/site_services/print_article.php?StoryID=ng_20090929_3601 [Accessed: October 2, 2009].

[17] D. Beizer, "USA.gov will move to cloud computing," Federal Computer Week, February 23, 2009. [Online]. Available: http://fcw.com/articles/2009/02/23/usagov-moves-to-the-cloud.aspx [Accessed: March 19, 2009].

[18] S. Towns, "Federal web portal moves to cloud computing platform," Government Technology, May 1, 2009. [Online]. Available: http://www.govtech.com/gt/articles/654240 [Accessed: June 29, 2009].

[19] J. Jackson, "But is it really cloud computing?" Government Computer News, May 18, 2009.[Online].Available:http://gcn.com/blogs/tech-blog/2009/05/gsa-cloudy.aspx [Accessed: August 16, 2009].

[20]J.N. Hoover, "Federal government considering cloud computing: The GSA's request about 'infrastructure as a service' includes 45 questions that may already eliminate some vendors," InformationWeek, May 14, 2009. [Online]. Available: International Journal of Web & Semantic Technology (IJWesT), Vol 1, Num 1, January 2010 17 http://www.informationweek.com/story/showArticle.jhtml?articleID=217500172 [Accessed: June 24, 2009].

[21] J.N. Hoover, "General Services Administration's CIO looks to the Cloud: Casey Coleman reveals the GSA's role in driving a government-wide cloud computing initiative and other IT priorities," InformationWeek, June 12, 2009. [Online]. Available:

http://www.informationweek.com/news/showArticle.jhtml?articleID=217800986 [Accessed: July 11, 2009].

[22] D. Stegon, "Vivek: One stop cloud shop," Washington TechBisNow, July 16, 2009. [Online]. Available: http://www.bisnow.com/washington_dc_tech_news_story.php?p=4787 [Accessed: September 2, 2009].

[23] M. Weigelt, "Kundra aids search for procurement leader," Federal Computer Week, July 31, 2009. [Online]. Available: http://fcw.com/Articles/2009/08/03/WEEK-Kundra-aids-OFPPsearch.aspx [Accessed: September 7, 2009].

[24] J. Urquhart, "Five ways that Apps.gov is a trendsetter," CNet News, September 18, 2009. [Online]. Available: http://www.news.cnet.com/8301-19413_3-10353469-240.html [Accessed: October 25, 2009].

[25] M. Weigelt, "Apps.gov: The new look in government procurement," Federal Computer Week, September 28, 2009. [Online]. Available: http://fcw.com/Articles/2009/09/28/FEAT-Apps.govcloud-computing.aspx?p=1
[Accessed: October 2, 2009].

[26] National Aeronautics and Space Administration (NASA), "About the NEBULA cloud," [Online]. Available: http://nebula.nasa.gov/about [Accessed: July 12, 2009].

[27] N. Atkinson, "NASA creates a new NEBULA: Cloud computing project," Universe Today, June 4, 2009. [Online]. Available: http://www.universetoday.com/2009/06/04/nasa-creates-a-newnebula-cloud-computing-project/ [Accessed: July 13, 2009].

[28] National Aeronautics and Space Administration (NASA), "NEBULA services," [Online]. Available: http://nebula.nasa.gov/services [Accessed: July 12, 2009].

[29] E. Naone, "Industry challenges: The standards question - Security and reliability aren't the only problems for cloud users and providers," Technology Review, July/August 2009. [Online]. Available: http://www.technologyreview.com/computing/22611/ [Accessed: September 10, 2009].

[30] J. Foley, "NASA launches 'Nebula' compute cloud," Information Week, May 22, 2009. [Online]. Available: http://www.informationweek.com/news/government/federal/showArticle.jhtml?articleID=217600714 [Accessed: July 28, 2009].

[31] A. Sternstein, "White House mulls making NASA a center for federal cloud computing," NextGov,July24,2009.[Online].Available: http://www.nextgov.com/site_services/print_article.php?StoryID=ng_20090724_6498
[Accessed: August 3, 2009].

[32] S. Lohr, "I.B.M. to help clients fight cost and complexity," New York Times, June 15, 2009.[Online].Available: http://www.nytimes.com/2009/06/15/technology/businesscomputing/15blue.html?_r=1&emc=eta1 [Accessed: July 5, 2009].

[33] U.S. Department of the Interior, National Business Center (NBC), NBC's Federal Cloud Playbook,August2009.[Online].Available: http://cloud.nbc.gov/PDF/NBC%20Cloud%20White%20Paper%20Final%20(Web%20Res).pdf [Accessed: October 31, 2009].

[34] G. Gross, "Gov't agencies embrace cloud computing: Government agencies say they're moving toward an embrace of cloud computing and software-as-a-service," PC World, February 25,2009. [Online]. Available: http://www.pcworld.com/printable/article/id,160233/printable.html [Accessed: May 22, 2009].
International Journal of Web & Semantic Technology (IJWesT), Vol 1, Num 1, January 2010 18

[35] K. Hart, "Tech firms seek to get agencies on board with cloud computing," The Washington Post,March31,2009.[Online].Available:http://www.washingtonpost.com/wpdyn/content/article/2009/03/30/AR2009033002848_pf.html [Accessed: April 21, 2009].

[36] M. Arrington, "White House using Google Moderator for town hall meeting. And AppEngine. And YouTube," Tech Crunch, March 24, 2009. [Online]. Available: http://www.techcrunch.com/2009/03/24/white-house-using-google-moderator-for-town-hallmeeting/ [Accessed: June 28, 2009].

[37] A. Sternstein, "Cloud computing could help agencies track stimulus funds," NextGov, April 30, 2009. [Online]. Available: http://www.nextgov.com/nextgov/ng_20090430_4418.php [Accessed: May 25, 2009].

[38] B. Glick, "Digital Britain commits government to cloud computing," Computing, June 16, 2009. [Online]. Available: http://www.computing.co.uk/computing/news/2244229/digital-britaincommits [Accessed: July 28, 2009].

[39] Government of the United Kingdom, Department for Business Innovation & Skills and Department for Culture, Media and Sport, Digital Britain: The Final Report, June 16, 2009. [Online].Available:http://www.culture.gov.uk/images/publications/digitalbritain-finalreportjun09.pdf [Accessed: June 25, 2009].

[40] Government of the United Kingdom, Department for Business Innovation & Skills and Department for Culture, Media and Sport, Press Release: Building Britain's Digital Future, June 16, 2009. [Online]. Available: http://www.culture.gov.uk/reference_library/media_releases/6220.aspx [Accessed: June 25 2009].

[41] O. Petrov, Backgrounder: Financial crisis and cloud computing - Delivering more for less. Demystifying cloud computing as enabler of government transformation, World Bank, Government Transformation Initiative, June 16, 2009. [Online]. Available: http://www.siteresources.worldbank.org/.../BackgrounderFinancialCrisisCloudComputing.doc [Accessed: September 30, 2009].

[42] Government of Denmark, IT and Telecom Agency, Press Release: Launching a dialogue on cloud computing in government, July 17, 2009. [Online]. Available: http://www.itst.dk/nyheder/nyhedsarkiv/2009/opleg-til-dialog-om-cloud- computing-i-detoffentlige [Accessed: October 2, 2009].

[43] ePractice Editorial Team, "DK: Public discussion in implementing cloud computing services in the Danish public sector," ePractice.eu, August 17, 2009. [Online]. Available: http://www.epractice.eu/en/news/292790 [Accessed: September 30, 2009].

[44] A. DiMaio, "Is there a European government cloud?" Gartner, May 19, 2009. [Online]. Available: http://blogs.gartner.com/andrea_dimaio/2009/05/19/is-there-a-european-governmentcloud/ [Accessed: June 22, 2009].

[45] R. Hicks, "The future of government in the cloud," FutureGov, 6(3), pp. 58-62, May 2009.

[46] Government of Japan, Ministry of Internal Affairs and Communications (MIC), Press release:MIC announces the outline of Digital Japan Creation Project (ICT Hatoyama Plan), May 2009.[Online].Available: http://www.soumu.go.jp/main_sosiki/joho_tsusin/eng/Releases/NewsLetter/Vol20/Vol20_01/Vo l20_01.html [Accessed: June 25, 2009].

[47] D. Rosenberg, "Supercloud looms for Japanese government," CNet News, May 14, 2009. [Online]. Available: http://news.cnet.com/8301-13846_3-10241081-62.html [Accessed: July 1, 2009].

[48] J.N. Hoover, "Japan hopes IT investment, private cloud will spur economic recovery: The Kasumigaseki Cloud is part of a larger government project that's expected to create 300,000 to 400,000 new jobs within three years," InformationWeek, May 15, 2009. [Online]. Available: http://www.informationweek.com/shared/printableArticle.jhtml?articleID=217500403 [Accessed: June 3, 2009]. International Journal of Web & Semantic Technology (IJWesT), Vol 1, Num 1, January 2010 19

[49] R. Hicks, "Chinese city builds public cloud to aid innovation," FutureGov, September 29, 2009. [Online]. Available: http://www.futuregov.net/articles/2009/sep/29/oil-rich-chinesecity-buildspublic-cloud-aid-inno/[Accessed: October 9, 2009].

[50] IBM, White Paper - Seeding the Clouds: Key Infrastructure Elements for Cloud Computing, February2009.[Online].Available: ftp://ftp.software.ibm.com/common/ssi/sa/wh/n/oiw03022usen/OIW03022USEN.PDF [Accessed: March 1, 2009].

[51] R. Hicks, "Thailand hatches plan for private cloud," FutureGov, May 25, 2009. [Online]. Available: http://www.futuregov.net/articles/2009/may/25/thailand-plans-private-cloud-e-gov/ [Accessed: June 17, 2009].

[52] D. Nystedt, "IBM expands presence in Vietnam," PC World, May 22, 2009. [Online]. Available:http://www.pcworld.com/article/165378/ibm_expands_presence_in_vietnam.html [Accessed: September 14, 2009].

[53] C. Babcock, "IBM talks up cloud computing: 'Cloud computing is a new way of consuming IT,'" InformationWeek, June 27, 2009. [Online]. Available: http://www.informationweek.com/news/software/hosted/showArticle.jhtml?articleID=2181016 1 7 [Accessed: October 1, 2009].

[54] T.P. Strecker, "Govt IT procurement in for shake-up," The Dominion Post, June 22, 2009. [Online]. Available: http://www.stuff.co.nz/technology/2521317/Govt-IT-procurement-in-forshake-up [Accessed: September 11, 2009].

[55] C.G. Lynch, "How Vivek Kundra fought government waste one Google App at a time," CIO, September 22, 2008. [Online]. Available: http://www.cio.com/article/print/450636 [Accessed: March 12, 2009].

[56] J.F. Rayport and A. Heyward, White paper: Envisioning the cloud: The next computing paradigm, a Marketspace point of view, March 20, 2009. [Online]. Available: http://www.marketspaceadvisory.com/cloud/Envisioning-the-Cloud.pdf [Accessed: April 24, 2009].

[57] J. Erlichman, "Special report: Cloud computing," 1105 Media, May 2009. [Online]. Available: http://www.1105govinfo.com/pdfs/custom/Snap-Cloud-final.pdf [Accessed: June 18, 2009].

[58] J. Jackson, "New metrics needed for cloud computing," Government Computer News, July 30, 2009. [Online]. Available: http://gcn.com/Articles/2009/07/30/New-metrics-for-cloudcomputing.aspx?p=1 [Accessed: August 30, 2009].

[59] G. Gruman, "Early experiments in cloud computing," InfoWorld, April 7, 2008. [Online]. Available: http://www.infoworld.com/infoworld/article/08/04/07/15FE-cloud-computingutility_1.html [Accessed: March 28, 2009]. [60] B. Gardiner, "The future of cloud computing: A long-term forecast," Portfolio, March 9, 2009. [Online]. Available: http://www.portfolio.com/views/columns/dual-perspectives/2009/03/09/ALong-Term-Forecast [Accessed: May 8, 2009].

[61] J. Kaplan, "Five myths about SaaS," CIO, March 23, 2009. [Online]. Available: http://www.cio.com/article/print/486091 [Accessed: June 13, 2009].

[62] B. Robinson, "3 steps to lift the cloud," Federal Computer Week, January 12, 2009. [Online]. Available: http://fcw.com/articles/2009/01/12/3-steps-to-lift-the-cloud.aspx [Accessed: August 23, 2009].

[63] A. Schurr, "Keep an eye on cloud computing: Cloud computing confusion leads to opportunity," MNetwork World, July 8, 2008. [Online]. Available: http://www.networkworld.com/newsletters/itlead/2008/070708itlead1.html [Accessed: February 24, 2009].

[64] L. Erlanger, "The tech jobs that the cloud will eliminate," CIO, July 22, 2009. [Online]. Available: http://www.cio.com/article/print/497824 [Accessed: September 29, 2009]. International Journal of Web & Semantic Technology (IJWesT), Vol 1, Num 1, January 2010 20

[65] B. Golden, "The case against cloud computing, part one," CIO, January 22, 2009. [Online]. Available: http://www.cio.com/article/477473/The_Case_Against_Cloud_Computing_Part_One [Accessed: March 4, 2009].

[66] R.L. Mitchell, "Patriot Act rains on cloud storage parade," Computerworld, July 13, 2009. [Online]. Available: http://blogs.computerworld.com/patriot_act_rains_on_cloud_storage_parade [Accessed: August 18, 2009].

[67] L. Cureton, "Cloud computing in the federal government: On a cloudy day how it will astoundyou," Goddard CIO Blog, March 14, 2009. [Online]. Available: http://blogs.nasa.gov/cm/blog/Goddard-CIO-Blog.blog/posts/post_1237089048316.html [Accessed: July 16, 2009].

[68] S. Higginbotham, "Cloud computing is a tool, not a strategy," GigaOm, February 19, 2009. [Online]. Available: http://gigaom.com/2009/02/19/cloud-computing-is-a-tool-not-a-strategy/ [Accessed: June 2, 2009].

[69] J. King, "5 key questions about cloud storage," Computerworld, July 13, 2009. [Online]. Available: http://www.computerworld.com/s/article/340471/Cloud_Storage_Illuminated [Accessed: August 6, 2009].

[70] D. Beizer, "Cloud computing comes into focus," Government Computer News, June 11, 2008. [Online]. Available: http://gcn.com/articles/2008/06/11/cloud-computing-comes-into-focus.aspx [Accessed: February 7, 2009].

[71] K. Melymuka, "The end of corporate IT: Nicholas Carr is at it again. This time, he envisions a future where IT has gone the way of the electric generator," Computerworld, May 9, 2005. [Online].Available:http://www.computerworld.com/managementtopics/management/story/0,10801,101573,00.html [Accessed: February 10, 2009].

Citation Count –92

Intelligent Semantic Web Search Engines: A Brief Survey

G.Madhu[1], A.Govardhan[2] and T.V.Rajinikanth[3] ,

[1]VNR VJIET, India, [2]J.N.T.U College of Engineering, India and [3]GRIET, India

ABSTRACT

The World Wide Web (WWW) allows the people to share the information (data) from the large database repositories globally. The amount of information grows billions of databases. We need to search the information will specialize tools known generically search engine. There are many of search engines available today, retrieving meaningful information is difficult. However to overcome this problem in search engines to retrieve meaningful information intelligently, semantic web technologies are playing a major role. In this paper we present survey on the search engine generations and the role of search engines in intelligent web and semantic search technologies.

KEYWORDS

Information retrieval, Intelligent Search, Search Engine, Semantic web.

For More Details :-http://airccse.org/journal/ijwest/papers/0111ijwest03.pdf

Volume Link :-http://www.airccse.org/journal/ijwest/vol2.html

REFERENCES

[1] Berners-Lee, T., Hendler, J. and Lassila, O. "The Semantic Web", Scientific American, May 2001.

[2] Deborah L. McGuinness. "Ontologies Come of Age". In Dieter Fensel, J im Hendler, Henry Lieberman, and Wolfgang Wahlster, editors. Spinning the Semantic Web: Bringing the World Wide Web to Its Full Potential. MIT Press, 2002.

[3] Ramprakash et al "Role of Search Engines in Intelligent Information Retrieval on Web",Proceedings of the 2nd National Conference; INDIACom-2008.

[4] T.Berner-Lee and M. Fishetti, Weaving the web "chapter Machines and the web,"Chapter Machines and the web, pp. 177-198, 1999.

[5] D.Fensal, W. Wahlster, H. Lieberman, "Spanning the semantic web: Bringing the worldwide web to its full potential, "MIT Press 2003.

[6] G. Bholotia et al.: "Keyword searching and browsing in database using BANKS," 18th Intl. conf. on Data Engineering (ICDE 2002), San Jose, USA, 2002.

[7] D. Tümer, M. A. Shah, and Y. Bitirim, An Empirical Evaluation on Semantic Search Performance of Keyword-Based and Semantic Search Engines: Google, Yahoo, Msn and Hakia, 2009 4th International Conference on Internet Monitoring and Protection (ICIMP'09) 2009.

[8] "Top 5 Semantic Search Engines".http://www.pandia.com/.

[9] H. Dietze and M. Schroeder, GoWeb: a semantic search engine for the life science web. BMC bioinformatics,Vol. 10, No. Suppl 10, pp. S7, 2009.

[10] Fu-Ming Huang et al. "Intelligent Search Engine with Semantic Technologies" International journal of Web & Semantic Technology (IJWesT) Vol.2, No.1, January 201141

[11] S. A. Inamdar1 and G. N. Shinde "An Agent Based Intelligent Search Engine System forWeb mining" Research, Reflections and Innovations in Integrating ICT in education.2008.

[12] Li Zhan, Liu Zhijing, , ' Web Mining Based On Multi-Agents ', COMPUTER SOCIETY,IEEE(2003).

[13] Patrick Lambrix et al, " Dwebic :An Intelligent Search Engine based on Default Description Logics"-1997.

[14] K. Satya Sai Prakash and S. V. Raghavan "Intelligent Search Engine: Simulation to Implementation", In the proceedings of 6th International conference on Information Integration and Web-based Applications and Services (iiWAS2004), pp. 203-212, September 27 - 29, 2004, Jakarta, Indonesia, ISBN 3-85403-183-01.

[15] Dan Meng, Xu Huang "An Interactive Intelligent Search Engine Model Research Based on User Information Preference", 9th International Conference on Computer Science and Informatics, 2006 Proceedings, ISBN 978-90-78677-01-7.

[16] Xiajiong Shen Yan Xu Junyang Yu Ke Zhang “Intelligent Search Engine Based on Formal Concept Analysis” IEEE International Conference on Granular Computing, pp 669, 2-4 Nov, 2007.

[17] Sanjib kumar, Sanjay kumar malik “TOWARDS SEMANTIC WEB BASED SEARCH ENGINES” National Conference on “Advances in Computer Networks & Information Technology (NCACNIT-09) March 24-25,

[18] F. F. Ramos, H. Unger, V. Larios (Eds.): LNCS 3061, pp. 145–157, Springer-Verlag Berlin Heidelberg 2004.

[19] Cohen, S. Mamou, J. Kanza, Y. Sagiv, Y “XSEarch: A Semantic Search Engine for XML” proceedings of the international conference on very large databases, pages 45-56, 2003.

[20] D. Bhagwat and N. Polyzotis, "Searching a file system using inferred semantic links," in Proceedings of HYPERTEXT '05 Salzburg, 2005, pp. 85-87.

[21] H. L. Wang, S. H. Wu, I. C. Wang, C. L. Sung, W. L. Hsu, and W. K. Shih, "Semantic search on Internet tabular information extraction for answering queries," in Proceedings of CIKM '00 McLean, 2000, pp.243-249.

[22] E. Kandogan, R. Krishnamurthy, S. Raghavan, S. Vaithyanathan, and H. Zhu, "Avatar semantic search: a database approach to information retrieval," in Proceedings of SIGMOD '06 Chicago, 2006, pp. 790-792.

[23] A. Maedche, B. Motik, L. Stojanovic, R. Studer, and R. Volz, "An infrastructure for searching, reusing and evolving distributed ontologies," in Proceedings of WWW '03 Budapest, 2003, pp. 439-448.

[24] www.georges.gardarin.free.fr/Articles /Sewise_NLDB2003.pdf.

[25] D. Ding, J. Yang, Q. Li, L. Wang, and W. Liu, "Towards a flash search engine based on expressive semantics," in Proceedings of WWW Alt.'04 New York, 2004, pp. 472-473.

[26] Chiung-Hon Leon Lee, Alan Liu, "Toward Intention Aware Semantic Web Service Systems," scc, vol. 1, pp.69-76, 2005 IEEE International Conference on Services Computing (SCC'05) Vol-1, 2005.

Citation Count –70

A Comparative Study of Ontology building Tools in Semantic Web Applications

Bhaskar Kapoor and Savita Sharma,

MAIT, India.

ABSTRACT

Ontologies have recently received popularity in the area of knowledge management and knowledge sharing, especially after the evolution of the Semantic Web and its supporting technologies. An ontology defines the terms and concepts (meaning) used to describe and represent an area of knowledge.The aim of this paper is to identify all possible existing ontologies and ontology management tools (Protégé 3.4, Apollo, IsaViz & SWOOP) that are freely available and review them in terms of: a) interoperability, b) openness, c) easiness to update and maintain, d) market status and penetration. The results of the review in ontologies are analyzed for each application area, such as transport, tourism, personal services, health and social services, natural languages and other HCI-related domains. Ontology Building/Management Tools are used by different groups of people for performing diverse tasks. Although each tool provides different functionalities, most of the users just use only one, because they are not able to interchange their ontologies from one tool to another. In addition, we considered the compatibility of different ontologies with different development and management tools. The paper is also concerns the detection of commonalities and differences between the examined ontologies, both on the same domain (application area) and among different domains.

KEYWORDS

Semantic/intelligent Web, Ontologies, Ontology building tools, Protégé 3.4, IsaViz, Apollo, SWOOP

For More Details :-http://airccse.org/journal/ijwest/papers/0710ijwest01.pdf

Volume Link :-http://www.airccse.org/journal/ijwest/vol1.html

REFERENCES

[1]T. Berners-Lee, J. Hendler, and O. Lassila. The semantic web. Scientific American, May 2001

[2] N.F. Noy and D.L. McGuinness, "Ontology Development 101: A Guide to Creating Your First Ontology", Technical Report KSL-01-05, Stanford Knowledge Systems Laboratory, March 2001.

[3] T. Gruber, "Ontology", Encyclopedia of Database Systems, Springer, 2008.

[4] L. Stojanovic and B. Motik, "Ontology evolution within ontology editors" in Conference on the Evaluation of Ontology-based Tools, September 2002

[5] Gruber R. Formal Ontology in Conceptual Analysis and Knowledge Representation. Chapter "Towards principles for the design of ontologies used for knowledge sharing" in Conceptual Analysis and Knowledge Representation.1993.

[6] http://protege.stanford.edu

[7] http://www.w3.org/2001/11/IsaViz/Overview.html

[8] http://apollo.open.ac.uk/index.html International journal of Web & Semantic Technology (IJWesT) Vol.1, Num.3, July 2010 12

[9] Aditya Kalyanpur, Bijan Parsia, Evren Sirin, Bernardo Cuenca Grau, James A. Hendler: "Swoop: A Web Ontology Editing Browser". J. Web Sem. 4(2): 144-153 (2006).

[10] C.W. Holsapple and K.D. Joshi, "A collaborative approach to ontology design". Commun. ACM 45 (2002) pp 42–47

[11] Web Ontology Language (OWL), Available online: http://www.w3.org/2004/OWL/

[12] S. Karim, A. M. Tjoa, Towards the Use of Ontologies for Improving User Interaction for People with Special Needs, in: Computers Helping People with Special Needs, vol. 4061/2006, Springer Berlin / Heidelberg, 2006, pp. 77–84. [13] S. Decker, S. Melnik, F. Van Harmelen, D. Fensel, M. Klein, J. Broekstra,M. Erdmann, I. Horrocks. The Semantic Web: The Roles of XML and RDF, IEEE Internet Computing, 2000, 4(5): 63-74

[14] http://www.w3.org/TR/2007/WD-xmlschema11-1-20070830/

[15] http://www.w3.org/TR/2004/REC-owl-guide-20040210/

[16] M.F. Lopez and A.G. Perez, "Overview and Analysis of Methodologies for Building Ontologies". Knowledge Engineering Review, 17(2), 129-156. (2002)

[17] IEEE Standard for Developing Software Life Cycle Processes. IEEE Computer Society. New York (USA). April 26, 1996.

[18]OWL Web Ontology Language Reference, http://www.w3.org/TR/2003/PR-owl-ref-20031215/

[19]OWL Web Ontology Language Reference, http://www.w3.org/TR/2004/REC-owl-ref-20040210/

[20] S. Karim, A. M. Tjoa, Towards the Use of Ontologies for Improving User Interaction for People with Special Needs, in: Computers Helping People with Special Needs, vol. 4061/2006, Springer Berlin / Heidelberg, 2006, pp. 77–84.

[21] M. Uschold and M. King, "Towards a Methodology for Building Ontologies". Workshop on Basic Ontological Issues in Knowledge Sharing (1995).

Citation Count –30

Combining Ontology Development Methodologies and Semantic Web Platforms for E-government Domain Ontology Development

Jean Vincent Fonou-Dombeu1,2 and Magda Huisman2, 1Vaal

University of Technology, South Africa and 2North-West University, South Africa

ABSTRACT

One of the key challenges in electronic government (e-government) is the development of systems that can be easily integrated and interoperated to provide seamless services delivery to citizens. In recent years, Semantic Web technologies based on ontology have emerged as promising solutions to the above engineering problems. However, current research practicing semantic development in e-government does not focus on the application of available methodologies and platforms for developing government domain ontologies. Furthermore, only a few of these researches provide detailed guidelines for developing semantic ontology models from a government service domain. This research presents a case study combining an ontology building methodology and two state-of-the-art Semantic Web platforms namely Protégé and Java Jena ontology API for semantic ontology development in e-government. Firstly, a framework adopted from the Uschold and King ontology building methodology is employed to build a domain ontology describing the semantic content of a government service domain. Thereafter, UML is used to semi-formally represent the domain ontology. Finally, Protégé and Jena API are employed to create the Web Ontology Language (OWL) and Resource Description Framework (RDF) representations of the domain ontology respectively to enable its computer processing. The study aims at: (1) providing egovernment developers, particularly those from the developing world with detailed guidelines for practicing semantic content development in their e-government projects and (2), strengthening the adoption of semantic technologies in e-government. The study would also be of interest to novice Semantic Web developers who might used it as a starting point for further investigations.

KEYWORDS

E-government, Semantic Web, Ontology, Java Jena API, Protégé, RDF, OWL

For More Details :-http://airccse.org/journal/ijwest/papers/2211ijwest02.pdf

Volume Link :-http://www.airccse.org/journal/ijwest/vol2.html

REFERENCES

[1] T. Lee, C.T. Hon and D. Cheung, "XML Schema Design and Management for E-government Data Interoperability," Electronic Journal of E-government, Vol. 7, No. 4, pp. 381-390, 2009.

[2] M. A. Wimmer, "Integrated Service Modelling for Online One-Stop Government," Electronic Markets, Vol. 12, No. 3, pp.149-156, 2002.

[3] S. Muthaiyah and L. Kerschberg, "Achieving Interoperability in E-government Services with two Modes of Semantic Bridging: SRS and SWRL," Journal of Theoretical and Applied Electronic Commerce Research, Vol. 3, No. 3, pp. 52-63, December, 2008.

[4] L. Sanati and J. Lu, "A Methodology Framework for E-government Service Delivery Integration, " In Egovernment Interoperability Campus, Paris, France, 2007.

[5] M. Watson, "Practical Artificial Intelligence Programming with Java, " Third Edition, 11 November, pp. 57- 72, 2008.

[6] K. Wilkinson, C. Sayers, H. Kuno and D. Reynolds, "Efficient RDF Storage and Retrieval in Jena2," In proceedings of the First International Workshop on Semantic Web and Databases (SWDB), Berlin, Germany, pp. 131-150, 2003.

[7] D. Apostolou, L. Stojanovic, T.P. Lobo, J.C. Miro and A. Papadakis, "Configuring E-government Services Using Ontologies," IFIP International Federation for Information Processing, Springer Boston, Vol. 2005, No. 189, pp. 1571-5736, 2005.

[8] Y. Xiao, M. Xioa and H. Zhao, "An Ontology for E-government Knowledge Modelling and Interoperability," In Proceedings of IEEE International Conference on Wireless Communications, Networking and Mobile Computing (WiCOM 2007), Shanghai, pp. 3600-3603, 21-25 September, 2007.

[9] J. Puustjarvi, "Using Knowledge Management and Business Process in E-government," In Proceedings of the Information Integration and Web-based Applications and Services 2006 (iiWas2006) Conference, Yogyakarta Indonesia, pp. 381-390, 4-6 December, 2006.

[10] F. Sanati and J. Lu, "Multilevel Life-event Abstraction Framework for E-government Service Integration," In Proceedings of the 9th European Conference on E-government 2009 (ECEG 2009), London, UK, pp. 550- 558, 29-30 June, 2009.

[11] L. A. Sabucedo and L. A. Rifon, "Semantic Service Oriented Architectures for E-government Platforms, " American Association for Artificial Intelligence, 2006.

[12] D. Chen, G. Nie and P. Liu, "Research Knowledge Sharing of E-government Based on Automatic Ontology Mapping, " In Proceedings of the 6th Wuhan International Conferenc on E-Business, China, pp.105-111, 2008.

[13] A. Gugliotta, L. Cabral, J. Domingue and V. Roberto, "A Conceptual Model for Semantically-Based Egovernment Portal, " In Proceedings of the International Conference on E-government 2005 (ICEG 2005), Ottawa, Canada, 2005.

[14] W. Zhang and Y. Wang, "Towards Building a Semantic Grid for E-government Applications, " WSEAS Transactions on Computer Research, Vol. 3, No. 4, April, 2008.

[15] F. Bettahar, C. Moulin and J.P. Barthes, "Towards a Semantic Interoperability in an E-government Application, " Electronic Journal of E-government, Vol. 7, No. 3, pp. 209-226, 2009.

[16] L.M.A. Sabucedo, L.E.A. Rifon, F. Corradini, A. Polzonetti and B. Re, "Knowledge-based Platform for Egovernment Agents: A Web-based Solution Using Semantic Technologies," Journal of Expert Systems with Applications, Elsevier Inc., Vol. 2010, No. 37, pp. 3647-3656, 2010.

[17] M. Uschold and M. King, "Towards a Methodology for Building Ontologies," In Proceedings of IJCAI95 Workshop on Basic Ontological Issues in Knowledge Sharing, Montreal, Canada, pp. 1-13, 1995.

[18] T. Berners-Lee, J. Hendler and O. Lessila, "The Semantic Web," Scientific American, May, 2001.

[19] M. Sabou, "Building Web Service Ontologies, " PhD Thesis, Dutch Graduate School for Information and Knowledge Systems, Netherlands, p. 1&17, 2006. International Journal of Web & Semantic Technology (IJWesT) Vol.2, No.2, April 2011 25

[20] A. Kalyanpur, "Debugging and Repair of OWL Ontologies, " PhD Thesis, Faculty of Graduate School, University of Maryland, USA, pp.1-3, 2006

[21] B. Kapoor and S. Sharma, "A Comparative Study Ontology Building Tools for Semantic Web Applications," International Journal of Web & Semantic Technology (IJWesT), Vol. 1, No. 3, pp. 1-13, July, 2010.

[22] M.R. Khondoker and P. Mueller, "Comparing Ontology Development Tools Based on an Online Survey," In Proceedings of the World Congress on Engineering (WCE), London, UK, June 30 - July 2, 2010.

[23] H. Knublauch, R. W. Fergerson, N. F. Noy and M. A. Musen, "The Protégé OWL Plugin: An Open Development Environment for Semantic Web Applications," In Proceedings of the Third International Semantic Web Conference, Lecture Notes in Computer Science, Hiroshima, Japan, November 7-11, pp. 229-243, 2004.

[24] T.R Gruber, "Toward Principles for the Design of Ontologies used for Knowledge Sharing," International Journal of Human-Computer Studies, Vol. 43, pp 907-928, 1993.

[25] M. Fernandez-Lopez, "Overview of Methodologies for Building Ontologies, " In Proceedings of the IJCAI99 workshop on Ontologies and Problem-Solving Methods (KRR5), Stockholm, Sweden, 2 August, 1999.

[26] H. Beck and H.S Pinto, "Overview of Approach, Methodologies, Standards, and Tools for Ontologies," Agricultural Ontology Service (UNFAO), 2003.

[27] C. Calero, F. Ruiz and M. Piattini, "Ontologies for Software Engineering and Software Technology, " Calero.Ruiz.Piattini (Eds.), Springer-Verlag Berlin Heidelberg, 2006.

[28] J.V. Fonou-Dombeu and M. Huisman, "Investigating E-government Knowledge Base ontology Supporting Development Project Monitoring in Sub Saharan Africa, " International Journal of Computing and ICT Research, Special Issue, Vo. 4, No. 1, pp. 20-29, October, 2010.

[29] M., Fahad, M.A., Qadir and S.A.H., Shah, "Evaluation of Ontologies and DL Reasoners," In IFIP International Federation for Information Processing, Boston: Springer, Vol. 288, pp. 17-27, 2008.

[30]L.Ceccaroni and E. Kendall,"A Semantically-Rich, Graphical Environment for Collaborative Ontology Development in Agentcities, " iD3, Barcelona, Spain, 2003.

[31] M., Horridge, H., Knublauch, A., Rector, R., Stevens, and C., Wroe, "A Practical Guide to Building OWL Ontologies Using the Protégé-OWL Plugin and CO-ODE Tools Edition 1.0," Research Report, University of Manchester, UK, 27 August, 2004.

[32] M., Singh and S.K., Malik, "Constructing Ontologies in OWL Using Protégé-2000, " In Proceedings of the 2nd National Conference on Challenges and Opportunities in Information Technology 2008 (COIT 2008), Mandi Gobindgarh, Punjab-India, 2008.

[33] B. McCarthy, "Jena Tutorial," Available at: http://jena.sourceforge.net/tutorial/index.html, [Accessed 06/02/2011]

[34]I.Dickinson,"JenaOntologyAPI,"Availableat:http://docs.huihoo.com/jena/ontology/index.html, [Accessed 06/02/2011]

Citation Count –32

Ontology Matching Based on hypernym, hyponym, holonym, and meronym Sets in WordNet

JungAe Kwak and Hwan-Seung Yong,

Ewha Womans University, Korea

ABSTRACT

Considerable research in the field of ontology matching has been performed where information sharing and reuse becomes necessary in ontology development. Measurement of lexical similarity in ontology matching is performed using synset, defined in WordNet. In this paper, we defined a Super Word Set, which is an aggregate set that includes hypernym, hyponym, holonym, and meronym sets in WordNet. The Super Word Set Similarity is calculated by the rate of words of concept name and synset's words inclusion in the Super Word Set. In order to measure of Super Word Set Similarity, we first extractedm Matched Concepts(MC), Matched Properties(MP) and Property Unmatched Concepts(PUC) from the result of ontology matching. We compared these against two ontology matching tools – COMA++ and LOM. The Super Word Set Similarity shows an average improvement of 12% over COMA++ and 19% over LOM.

KEYWORDS

Ontology Matching, Property Unmatched Concept, Semantic Relationship Set, Super Word Set Similarity

For More Details :-http://airccse.org/journal/ijwest/papers/0410ijwest1.pdf

Volume Link :-http://www.airccse.org/journal/ijwest/vol1.html

REFERENCES

[1] AnHai Doan, Pedro Domingos, and Alon Halevy, (2003) "Learning to Match the Schemas of Data Sources: A Multistrategy Approach," Machine Learning, Vol. 50, No.3, pp 279-301.

[2] Namyoun Choi, Il-Yeol Song, and Hyoi Han, (2006) "A Survey on Ontology Mapping," ACM SIGMOD Record, Vol. 35, No, 3, pp 34-41.

[3] AnHai Doan, Jayant Madhavan, Robin Dhamankar, Pedro Domingos, and Alon Y. Halevy, (2003) "Learning to match ontologies on the Semantic Web," The VLDB Journal, Vol. 12, No 4, pp 303-319.

[4] Domenico Beneventano, Sonia Bergamaschi, Francesco Guerra, and Maurizio, (2003) "Synthesizing an Integrated Ontology," IEEE Internet Computing, pp 42-51.

[5] Alexander Maedche, Boris Motik, Nuno Silva, and Raphael Volz, (2002) "MAFRA - A MApping FRAmework for Distributed Ontologies in the semantic Web," Proc. of the Workshop on Knowledge Transformation for the Semantic Web (KTSW 2002)pp 60-68.

[6] John Li, (2004) "LOM: A Lexicon-based Ontology Mapping Tool," Proc. of the Performance Metrics for Intelligent Systems Workshop (PerMIS. '04), pp 1-5.

[7] David Aumueller, Hong-Hai Do, Sabine Massmann, and Erhard Rahm, (2005) "Schema and ontology matching with COMA++ ," Proc. of the ACM SIGMOD International Conference on Management of Data, pp 906-908.

[8] Jie Tang, Juan-Zi Li, Bangyong Liang, Xiaotong Huang, Yi Li and Kehong Wang, (2006) "Using Bayesian decision for ontology mapping," Journal of Web Semantics, Vol. 4, No. 4, pp 243-262.

[9] Octavian Udrea, Lise Getoor, and Renée J. Miller, (2007) "Leveraging data and structure in ontology integration," Proc. of the ACM SIGMOD International Conference on Management of Data, pp 449-460.

[10] WordNet, http://wordnet.princeton.edu/

[11] Patrick Pantel and Dekang Lin, (2002) "Discovering Word Senses from Text," Proc. of the Eighth ACM SIGKDD International Conference on Knowledge Discovery and Data Mining, pp 613-619.

[12] Harry Kornilakis, Maria Grigoriadou, Kyparisia A.Papanikolaou, and Evangelia Gouli, (2004) "Using WordNet to Support Interactive Concept Map Construction," Proc. of the IEEE International Conference on Advanced Learning Technologies (ICALT'04), pp 600-604.

[13] Ian Niles and Adam Pease, (2001) "Toward a Standard Upper Ontology," Proc. of the International Conference on Formal Ontology in Information Systems (FOIS-2001), pp 29.

[14] Adam Pease, and Ian Niles, (2003) "Linking Lexicons and Ontologies: Mapping WordNet to the Suggested Upper Merged Ontology," Proc. of the IEEE International Conference on Information and Knowledge Engineering, pp 412-416.

[15] Ian Niles, and Allan Terry, (2004) "The MILO: A general purpose, mid-level ontology," Proc. of the International Conference on Information and Knowledge Engineering (IKE'04), pp 15-19.

[16] Grigoris Antoniou and Frank van Harmelen, (2004) A Semantic Web Primer, The MIT Press, Massachusetts, pp 118.

Citation Count –30

Ontology Guided Information Extraction from Unstructured Text

Raghu Anantharangachar, Srinivasan Ramani and S Rajagopalan,

International Institute of Information Technology, India

ABSTRACT

In this paper, we describe an approach to populate an existing ontology with instance information present in the natural language text provided as input. An ontology is defined as an explicit conceptualization of a shared domain [18]. This approach starts with a list of relevant domain ontologies created by human experts, and techniques for identifying the most appropriate ontology to be extended with information from a given text. Then we demonstrate heuristics to extract information from the unstructured text and for adding it as structured information to the selected ontology. This identification of the relevant ontology is critical, as it is used in identifying relevant information in the text. We extract information in the form of semantic triples from the text, guided by the concepts in the ontology. We then convert the extracted information about the semantic class instances into Resource Description Framewor (RDF3) and append it to the existing domain ontology. This enables us to perform more precise semantic queries over the semantic triple store thus created. We have achieved 95% accuracy of information extraction in our implementation

Keywords

Ontology, Information Extraction, Knowledge Extraction, Semantic web, Ontology Based Information Extraction

For More Details :-http://airccse.org/journal/ijwest/papers/4113ijwest02.pdf

Volume Link :- http://www.airccse.org/journal/ijwest/vol4.html

REFERENCES

[1] Embley, D., Campbell, D., Smith, R. and Liddle, S.. (1998). Ontology-based extraction and structuring of information from data-rich unstructured documents. ,Proceedings of the seventh international conference on Information and knowledge management,pp.52-59 inproceedings, http://dl.acm.org/citation.cfm?id=288641

[2] Wimalasuriya, D. and Dou, D.. (2010). Ontology-based information extraction: An introduction and a survey of current approaches. Journal of Information Science,Vol. 36(3), pp. 306-323 article, http://jis.sagepub.com/content/36/3/306.short

[3] Buitelaar, P., Cimiano, P., Racioppa, S. and Siegel, M.. (2006). Ontology-based information extraction with soba. ,Proceedings of the International Conference on Language Resources and Evaluation, pp. 2321-2324 in proceedings http://nwo.eu/files.nsf/pages/NWOA_7RABAU/$file/081121%20PPT%20Paul%20Buitelaar%20op %2021%20nov%202008.pdf

[4] Popov, B., Kiryakov, A., Kirilov, A., Manov, D., Ognyanoff, D. and Goranov, M.. (2003). KIM-- semantic annotation platform. The Semantic Web-ISWC 2003,, pp. 834-849 article, http://www.springerlink.com/index/31l2tk95lcdv76py.pdf

[5] Maynard, D., Peters, W. and Li, Y.. (2006). Metrics for evaluation of ontology-based information extraction, WWW 2006 Workshop on" Evaluation of Ontologies for the Web"(EON),Edinburgh,Scotlandinproceedings,http://www.ra.ethz.ch/CDstore/www2006/km.aifb.unikarlsruhe.de/ws/eon2006/eon2006maynardetal.pdf

[6] Saggion, H., Funk, A., Maynard, D. and Bontcheva, K.. (2007). Ontology-based information extraction for business intelligence. ,Proceedings of the 6th international The semantic web and 2nd Asian conference on Asian semantic web conference, pp. 843-856 inproceedings, http://dl.acm.org/citation.cfm?id=1785225

[7] Buitelaar, P., Olejnik, D. and Sintek, M.. (2004). A protégé plug-in for ontology extraction from text based on linguistic analysis. The Semantic Web: Research and Applications,, pp. 31-44article,http://link.springer.com/chapter/10.1007%2F978-3-540-25956-5_3?LI=true
International Journal of Web & Semantic Technology (IJWesT) Vol.4, No.1, January 2013 36

[8] Agichtein, E. and Gravano, L.. (2000). Snowball: Extracting relations from large plain-text collections.,Proceedings of the fifth ACM conference on Digital libraries, pp. 85-94 inproceedings, http://dl.acm.org/citation.cfm?id=336644

[9] Dahab, M., Hassan, H. and Rafea, A.. (2008). TextOntoEx: Automatic ontology construction from natural English text. Expert Systems with Applications,Vol. 34(2), pp. 1474-1480 article, http://www.sciencedirect.com/science/article/pii/S0957417407000243

[10] Maynard, D., Li, Y. and Peters, W.. (2008). Nlp techniques for term extraction and ontology population. ,Proceeding of the 2008 conference on Ontology Learning and Population: Bridging theGapbetweenTextandKnowledge,pp.107-127inproceedings, http://dl.acm.org/citation.cfm?id=1563834

[11] Hearst, M.. (1992). Automatic acquisition of hyponyms from large text corpora. ,Proceedings of the 14th conference on Computational linguistics-Volume 2, pp. 539-545 inproceedings, http://dl.acm.org/citation.cfm?id=992154

[12] Adelberg, B.. (1998). NoDoSE—a tool for semi-automatically extracting structured and semistructured data from text documents. ,Vol. 27(2)ACM SIGMOD Record, pp. 283-294 inproceedings, http://dl.acm.org/citation.cfm?id=276330

[13] Soderland, S.. (1999). Learning information extraction rules for semi-structured and freetext.Machinelearning,Vol.34(1),pp.233-272article, http://www.springerlink.com/index/m23n8197vg924t51.pdf

[14] Raghu A. Ramani S. Semantic web techniques for Yellow page service providers, InternationalJournalofWebandSemanticTechnology, http://airccse.org/journal/ijwest/papers/3312ijwest04.pdf

[15]DeliaRusu,LorandDali,BlažFortuna,MarkoGrobelnik,DunjaMladenićTriplet ExtractionfromSentences,http://ailab.ijs.si/delia_rusu/Papers/is_2007.pdf
[16] http://nlp.stanford.edu/software/corenlp.shtml

[17] Karkaletsis, V., Fragkou, P., Petasis, G. and Iosif, E.. (2011). Ontology based information extraction from text. Knowledge-driven multimedia information extraction and ontology evolution,, pp.89-109 article, http://www.springerlink.com/index/2071V60202586007.pdf

[18]T.R.Gruber.,ATranslationApproachtoPortableOntologies,KnowledgeAcquisition, 5(2):199- 220, 1993.

[19] https://protege.stanford.edu/

[20] Maynard, D., Peters, W. and Li, Y.. (2006). Metrics for evaluation of ontology-based information extraction. ,WWW 2006 Workshop on" Evaluation of Ontologies for the Web"(EON), Edinburgh, Scotland inproceedings,

Citation Count –29

Analyzing the Impact of Visitors on Page Views with Google Analytics

Mohammad Amin Omidvar, Vahid Reza Mirabi and Narjes Shokry,

Islamic Azad University, Iran

ABSTRACT

This paper develops a flexible methodology to analyze the effectiveness of different variables on various dependent variables which all are times series and especially shows how to use a time series regression on one of the most important and primary index (page views per visit) on Google analytic and in conjunction it shows how to use the most suitable data to gain a more accurate result. Search engine visitors have a variety of impact on page views which cannot be described by single regression. On one hand referral visitors are well-fitted on linear regression with low impact. On the other hand, direct visitors made a huge impact on page views. The higher connection speed does not simply imply higher impact on page views and the content of web page and the territory of visitors can help connection speed to describe user behavior. Returning visitors have some similarities with direct visitors.

KEYWORDS

Internet, User studies, worldwide web, Systems analysis, Data mining, visitors behavior, web analysis, web metric, Google Analytics

For More Details :-http://airccse.org/journal/ijwest/papers/0111ijwest02.pdf

Volume Link :- http://www.airccse.org/journal/ijwest/vol2.html

REFERENCES

[1] Analytics Usage Statistics. (2010, July). Retrieved from BuiltWith Technology Usage Statistics:http://trends.builtwith.com/analytics

[2]Cookies&GoogleAnalytics.(2010).Retrieved2010,from google:http://code.google.com/apis/analytics/docs/concepts/gaConceptsCookies.html

[3] Google Analytics Usage Statistics. (2010, Jun). Retrieved from Web and Internet Technology Usage Statistics: http://trends.builtwith.com/analytics/Google-Analytics

[4] Association, W. A. (n.d.). "Big Three Definitions" Ver. 1.0. 2300 M Street, Suite 800, Washington DC 20037, United States.

[5] Association, W. A. (2006). Web Analytics "Big Three" Definitions. Washington DC 20037.

[6] Assumptions of Linear Regression. (n.d.). Retrieved July 2010, from homepages.ius.edu: http://homepages.ius.edu/WCLANG/m305/notes11.htm

[7] B.king, A. (2008). Website Optimization. Orielly.

[8] Barua, A., Konana, P., B.Whinston, A., & yin, F. (2001.). Driving e-business excellence. Sloan Management, Rev. 34(1) 36–44.

[9] Batchelor, P. R. (n.d.). EVIEWS tutorial:Cointegration and error correction. City University Business School, London.

[10] Beatriz Plaza Faculty of Economics, U. o. (2009). Monitoring web traffic source effectiveness with Google Analytics An experiment with time series. Emerald, 9.

[11] Bking, A. (2008). Website optimization. Oreilly.

[12] Bodily, S., & Venkataraman, S. (2004). Not walls, windows: capturing value in the digital age. Journal of Business Strategy, Vol. 25 No. 3, pp.15-25.

[13] capital, I. u. (n.d.). ITU World Telecommunication/ICT indicators database.

[14] Chakraborty, G. L. (2002). An empirical investigation of antecedents of B2B Web sites' effectiveness. Journal of Interactive Marketing,Vol. 16 No. 4, 51-72.

[15] Chakraborty, G. L. (2002). An empirical investigation of antecedents of B2B Websites' effectiveness. Journal of Interactive Marketing, 16: 51–72. doi: 10.1002/dir.10044.

[16] Consotium, I. S. (2010). The ISC Domain Survey | Internet Systems Consortium. Retrieved fromInternet Systems Consortium | Internet Systems Consortium: http://www.isc.org/solutions/survey

[17] Cotter, S. (1993). TAKING THE MEASURE OF E-MARKETING SUCCESS. Journal of Business Strategy, Vol. 23 Iss: 2, pp.30 - 37.

[18] Eisenberg, B. (November 26, 2007). Future Now's 2007 Retail Customer Experience Study.

[19] Eugenia Y. Huang, D. o. (2005). Is revamping your web site worthwhile? Emerald, 15.

[20] FMI Group. (2001). Web site Visitors Analysis-Statistics or Intelligence? Basinstoke: FMI Group.[21] Fourie, I., & Bothma, T. (2007). Information seeking: an overview of web tracking and the criteria for tracking software. Aslib Proceedings,

[22] Garson, G. D. (20010,2009,2008). Logistic Regression. Retrieved July 2010, from http://faculty.chass.ncsu.edu: http://faculty.chass.ncsu.edu/garson/PA765/logistic.htm

[24] Google, A. c. (2009). Appraising Your Investment In Enterprise Web Analytics. Forrester consulting, (p. 20). International Journal of Web & Semantic Technology (IJWesT) Vol.2, No.1, January 2011 31

[25] Gupta, Siddharth; Thakur, Narina;. (2010). Semantic Query Optimisation with Ontology. International journal of Web & Semantic Technology (IJWesT).

[26] Hoffman, D. L., & Novak, T. P. (October 1996). Marketing in Hypermedia Computer-Mediated Environments. journal of marketing, 50-68.

[27] Hossain, S. (n.d.). An Investigation into Regression Model using EVIEWS. Lecturer for Economics.

[28] Hossain, S. (n.d.). An Investigation into Regression Model using EVIEWS. Retrieved from http://www.sayedhossain.com/: www.sayedhossain.com/files/Lec1.Regression.ppt

[29] http://www.hkbu.edu.hk/~billhung/econ3600/application/app01/app01.html. (n.d.). DickeyFuller Unit Root Test. Retrieved from Hong Kong baptist university: http://www.hkbu.edu.hk/~billhung/econ3600/application/app01/app01.html

[30] Inge Geyskens, K. G. (2002). The Market Valuation of Internet Channel Additions. The Journal of Marketing, Vol. 66, No. 2 (Apr., 2002), pp. 102-119 .

[25] Gupta, Siddharth; Thakur, Narina;. (2010). Semantic Query Optimisation with Ontology. International journal of Web & Semantic Technology (IJWesT).

[26] Hoffman, D. L., & Novak, T. P. (October 1996). Marketing in Hypermedia Computer-Mediated Environments. journal of marketing, 50-68.

[27] Hossain, S. (n.d.). An Investigation into Regression Model using EVIEWS. Lecturer for Economics.

[28] Hossain, S. (n.d.). An Investigation into Regression Model using EVIEWS. Retrieved from http://www.sayedhossain.com/: www.sayedhossain.com/files/Lec1.Regression.ppt

[29]http://www.hkbu.edu.hk/~billhung/econ3600/application/app01/app01.html.(n.d.). DickeyFuller Unit Root Test. Retrieved from Hong Kong baptist university: http://www.hkbu.edu.hk/~billhung/econ3600/application/app01/app01.html

[30] Inge Geyskens, K. G. (2002). The Market Valuation of Internet Channel Additions. The Journal of Marketing, Vol. 66, No. 2 (Apr., 2002), pp. 102-119 .

Citation Count –28

Agents and OWL-S Based Semantic Web Service Discovery With User Preference Support

Rohallah Benaboud1, Ramdane Maamri2 and Zaidi Sahnoun2,

1University of Oum El Bouaghi, Algeria and 2University of Constantine 2, Algeria

ABSTRACT

Service-oriented computing (SOC) is an interdisciplinary paradigm that revolutionizes the very fabric of distributed software development applications that adopt service-oriented architectures (SOA) can evolve during their lifespan and adapt to changing or unpredictable environments more easily. SOA is built around the concept of Web Services. Although the Web services constitute a revolution in Word Wide Web, they are always regarded as non-autonomous entities and can be exploited only after their discovery. With the help of software agents, Web services are becoming more efficient and more dynamic. The topic of this paper is the development of an agent based approach for Web services discovery and selection in witch, OWL-S is used to describe Web services, QoS and service customer request. We develop an efficient semantic service matching which takes into account concepts properties to match concepts in Web service and service customer request descriptions. Our approach is based on an architecture composed of four layers: Web service and Request description layer, Functional match layer, QoS computing layer and Reputation computing layer.

Keywords

Web service, discovery, agents, OWL-S & QoS.

For More Details :-http://airccse.org/journal/ijwest/papers/4213ijwest06.pdf

Volume Link :- http://www.airccse.org/journal/ijwest/vol4.html

REFERENCES

[1] R. Thangavel, & B. Palanisamy, (2011) " Efficient Approach Towards an Agent-Based Dynamic Web Service Discovery Framework with QoS Support", International Symposium on Computing, Communication, and Control (ISCCC), pp 74-78

[2] G, Amirthayogam. M, Rathinraj & A, Gayathri, (2013) "Web Service Discovery with QoS-An AgentBased Approach", International Journal of Futuristic Science Engineering and Technology, Vol 1, No. 1, pp 1-5.

[3] Shenghui, Zhao. Guoxin, Wu. Guilin, Chen. & Haibao, Chen, (2011) "Reputation-aware Service Selection based on QoS Similarity". Journal of networks, Vol. 6, No. 7, pp 950-957.

[4] V. Sharma & M. Kumar, (2011) "Web Service Discovery Research: A Study of Existing Approaches," Int. Journal on Recent Trends in Engineering & Technology, Vol. 1, pp 106-109.

[5] H. Wang, Y. Zhang, & R. Sunderraman, (2005) "Extensible soft semantic web services agent," Soft Comput, Vol. 10, pp 1021–1029.

[6] Pradnya Khutade, & Rashmi Phalnikar, (2012) "QoS based web service discovery using oo concepts", International Journal of Advanced Technology & Engineering Research (IJATER), Vol. 2, No. 6, pp 81-86.

[7] A. Ankolekar &t al, (2002) "DAML-S: Web Service Description for the Semantic Web," In Proc. 1st International Semantic Web Conf., Italy, pp 348-363.

[8] W3C, ''Web Services Semantics -- WSDL-S'', http://www.w3.org/Submission/WSDL-S/

[9] J. de Bruijn, Holger Lausen, A. Polleres, & D. Fensel, (2006) "The Web Service Modeling Language WSML: An Overview," In Proc. 3rd European Semantic Web Conf., Budva, Montenegro, pp 590- 604.

[10] D. Martin & al, (2004) "Bringing Semantics to Web Services: The OWL-S Approach," In Proc. of 1st International Workshop on Semantic Web Services and Web Process Composition conf., USA, pp 26- 42.

[11] A. Averbakh, D. Krause, & D. Skoutas, (2009) "Exploiting User Feedback to Improve Semantic Web Service Discovery," In Proc. 8th International Semantic Web Conf., pp 33-48.

[12] G. Lu, T. Wang, G. Zhang, & S. Li, (2012) "Semantic Web Services Discovery Based on Domain Ontology", World Automation Congress (WAC), pp 1-4.

[13] Jiuxin, Cao. Jingyu, Huang. Guojin, Wang. & Jun, Gu. (2009) " QoS and Preference based Web Service Evaluation Approach", 2009 Eighth International Conference on Grid and Cooperative Computing, 27-29 Aug. pp 220-226.

[14] Z, Xu, P, Martin, W. Powley, & F, Zulkernine, (2007) "Reputation-Enhanced QoS-based Web Service Discovery," In Proc. the International Conference on Web Services, pp 249- 256. International Journal of Web & Semantic Technology (IJWesT) Vol.4, No.2, April 2013 75

[15] M. Paolucci, T. Kawamura, T. Payne, & K. Sycara, (2002) "Semantic matching of web services capabilities," In Proc. the 1st International Semantic Web Conf., pp 333-347.

[16] Liu Sha, Guo Shaozhong, Chen Xin & Lan Mingjing, (2009) "A QoS based Web Service Selection Model", in Proceedings of the IEEE International Forum on Information Technology and Applications, pp 353-356.

[17] S. P. Ran, (2003) "A Model for Web Service Discovery with QoS". ACM SIGecom Exchanges, Vol. 4, No. 1, ACM Press, pp 1–10.

[18] Y. Liu, A. H. H. Ngu, & L. Zeng, (2004) "Qos computation and policing in dynamic web service selection," In Proc. the 13th international World Wide Web conf. on Alternate track papers & posters, New York , pp 66-73.

[19] Zaki, Malik. & Athman, Bouguettaya, (2009) "RATEWeb: Reputation Assessment for Trust Establishment among Web Services", The VLDB Journal. Vol.18, No.4, pp 885-911.

[20] E.M. Maximilien & M.P. Singh. (2004) "Towards Autonomic Web Services, Trust and Selection". ICSOC'04, pp 212–221.

[21] H. Zhang, W.B. Croft, B. Levine, & V. Lesser, (2004) "A Multi-Agent Approach for Peer-to-Peer Based Information Retrieval System," In Proc. Third Int'l Joint Conf. Autonomous Agents and MultiAgent Systems, pp 456-463.

[22] L. Lin, S. Kai, & S. Sen, (2008) "Ontology-based QoS-Aware Support for Semantic Web Services," Technical Report at Beijing University of Posts and Telecommunications.

[23] Y. Zhang, H. Huang, D. Yang, H. Zhang, H. Chao, & Y. Huang, (2009) "Bring QoS to P2P-based semantic service discovery for the Universal Network," Journal Personal and Ubiquitous Computing, Vol 13, pp 471–477.

[24] A. Malucelli, (2006) "Ontology-based Services for Agents Interoperability". Doctoral thesis. University of Porto.

[25] N. Ould ahmed, & S. Tata, (2007) "How to consider requester's preferences to enhance web service discovery". Proceedings of the second International Conference on Internet and Web Applications and Services, Morne, Mauritius, pp 59-64.

[26] R. Benaboud, R. Maamri, & Z. Sahnoun, (2011) "Towards scalability of reputation and QoS based web services discovery using agents and ontologies", iiWAS '11 Proceedings of the 13th International Conference on Information Integration and Web-based Applications and Services. Ho Chi Minh City, Vietnam, pp 262-269.

[27] Bellifemine, F., Caire, G., Trucco, T. & Rimassa, G. (2003). "Jade Programmer's Guide". http://sharon.cselt.it/projects/jade/.