Abstract

Caching and Prefetching are the two approaches for Web Caching. Again Web caching is a technology to reduce the response time, bandwidth uses and improving the network traffic etc. Web Prefetching tries to put the future used web objects into cache with higher probability of cache hit. In Web caching, Cache replacement algorithm is the core of it. So, good replacement policy would make effective management of cache memory utilization with higher probability of cache hits. General replacement policy like LRU, FIFO, LFU considering only the arrival time, but other parameters related to web objects should consider for deciding cacheable or not. This paper approaches a replacement policy with fuzzy inference system with input parameters Frequency, Latency and Bytesent of web objects. By considering these parameters, the replacement would have artificial intelligence in cache replacement policy.
An Optimization Technique of Web Caching using Fuzzy Inference System

References

- Wei-Guang Teng, Cheng-Yue Chang, and Ming-Syan Chen &quot;Integrating Web Caching and Web Prefetching in Client-Side Proxies&quot; Fellow, IEEE.
- Jaeun Jeon, Gunhoon Lee, Ki Dong Lee and Byoungchul Ahn, &quot;An Adaptive Prefetching Method for Web Caches&quot; Yeungnam University, School of Electrical Engineering and Computer Science.
- L. Y. CAO and M. T. OZSU &quot;Evaluation of Strong Consistency Web Caching Techniques&quot; University of Waterloo, School of Computer Science, Waterloo, ON, Canada N2L 3G1.
- Qiang Yang, Henry Haining Zhang, Ian T. Y. Li, and Ye Lu &quot;Mining Web Logs to Improve Web Caching and Prefetching&quot; School of Computing Science Simon Fraser University Burnaby, BC, Canada V5A 1S6 (qyang, hzhangb, tle, yei)@cs. sfu. ca
- Areerat Songwattana &quot;Mining Web logs for Prediction in Prefetching and Caching&quot; School of Engineering and Technology, Asian Institute of Technology Rangsit, Pathumthani, 12000, Thailand areerat@rangsit. rsu. ac. th, sareerat@gmail. com
- Qiang Yang and Haining Henry Zhang &quot;Web-Log Mining for Predictive Web Caching&quot;.
- Francesco Bonchi1, Fosca Giannotti2, Giuseppe Manco3, Chiara Renso4, Mirco Nanni5, Dino Pedreschi6, Salvatore Ruggieri7 &quot;Data Mining for Intelligent Web Caching&quot;.
- 1,2,3,4 CNUCE-CNR - Institute of Italian National Research Council5,6,7 Department of Computer Science, University of Pisa
- Víctor J. Sosa Sosa1, Gabriel González S2, Leandro Navarro3, &quot;Building a Flexible Web Caching System&quot; 1, 2 Centro Nacional de Investigación y Desarrollo Tecnológico, Interior Internado Palmira S/N, Cuernavaca, Morelos, México. Universitat Politècnica de Catalunya (UPC) Jordi Girona, 1-3, D6-105, Campus Nord, Barcelona, Spain.
- Sarina Sulaiman1, Siti Mariyam Shamsuddin2, Fadni Forkan3, Ajith Abraham4 &quot;Intelligent Web Caching Using Neuro computing and Particle Swarm Optimization Algorithm&quot; 1, 2, 3Sof Soft Computing Research Group, Faculty of Computer Science and Information System, Universiti Teknologi Malaysia, Skudai, Johor, Malaysia. 4Centre for Quantifiable Quality of Service in Communication Systems, Norwegian University of Science and Technology, Trondheim, Norway.
- Michael Chau, and Hsinchun Chen &quot;Incorporating Web Analysis Into Neural Networks: An Example in Hopfield Net Searching&quot; IEEE
- S. V. Nagaraj &quot;CACHING AND ITS APPLICATION&quot; Chapter:1 VARIOUS FLAVORS OF WEB CACHING, page 316
- Konstantinos Stamos, George Pallis, and Athena Vakali &quot;Integrating Caching Techniques on a Content Distribution Network&quot; Konstantinos Stamos, George Pallis, and Athena Vakali, Department of Informatics Aristotle University of Thessaloniki, 54124, Thessaloniki,
An Optimization Technique of Web Caching using Fuzzy Inference System

Greece.
- S. V. Nagaraj "CACHING AND ITS APPLICATION" Chapter:11 Prefetching, page 105-122
- Waleed Ali & Siti Mariyam Shamsuddin "Neuro-Fuzzy System in Web Client-side Caching" Faculty of Computer Science & Information System, University Technology of Malaysia
- Josef Schmidbauer and Hilmar Linder "Utilizing Layered Multicast for Web Caching" Department of Scientific Computing, Paris-Lodron University of Salzburg, Salzburg, Austria

Index Terms

Computer Science
Information Sciences

Keywords
Web Caching; Fis (fuzzy Inference System); Frequency; Latency; Bytesent