

# Literature Review on On-Page & Off-Page SEO for Ranking Purpose

Guddu Kumar<sup>1</sup>, Raj Kumar Paul<sup>2</sup>

<sup>1,2</sup>Department of Computer Science & Engineering, VIT, RKDF University, Bhopal, India

<sup>1</sup>[sagarkumarsngh@gmail.com](mailto:sagarkumarsngh@gmail.com), <sup>2</sup>[rajikumar.rkp@gmail.com](mailto:rajikumar.rkp@gmail.com)

**Abstract**— Web is the term which is known by everyone in this world. It is the fastest growing sector. All of us are consumer of it either as commerce, industry & individual. Search engine optimization is a technique which is used in the internet. We can say that it is a procedure of finding our ideal outcome. Google is one of the known search engine. Search Engine Optimization is imperative for websites to improve the rank for search results and get more online visits mentioned by the client. This search engine ranks give the better and upgraded result to client, which will assist them with viewing the well-known page among the quantity of pages accessible in the search results. Aside from this search engine ranking, it likewise empowers the websites to contend with other adversary's site as every single site proprietor hope to see their very own site on the list before other's websites. This paper advances idea about SEO standards and fundamental methodologies. It additionally communicates diverse methods and devices that are utilized via search engines to improve its results. Also it presents the thesis section, which gives the comparative analysis of SEO techniques and tools which are used to rank our website.

**Keywords** - Search engine, page rank, Search Engine Optimization, SEO Tools.

## I. INTRODUCTION

### A. Search Engine Optimization

The significance of web and research association media as data source likes to ascend to customary writing. For example, Google and other web search tools rapidly change their hunt criteria and figuring's that is the reason web index authorities and specialist need to keep revive themselves for latest theories and, lead of web crawlers. In this part I will show a detail diagram of my proposition on topics, for example, search engine streamlining strategies, tools, methods, content administration nuts and bolts and will think about their execution with respect to web crawler progression and will similarly review of internet searcher working and ordering methods. The fundamental web crawler I focused is Google since now it transforms into the ruler of pursuit business and most used web index now a days

similarly as different well known web crawlers like Yahoo, Bing and AltaVista.

web search tool which are outcomes of pursuit request when a customer makes watchwords in inquiry Every one of us using web opens Google or other internet searcher while discovering data on web. Individuals who utilize the web either searching for correspondence, data, excitement or an item administration like purchasing and selling. Search has turned out to be incorporated into the texture of our general public and age. Similarly, as indicated by com Source, in excess of 25 billion searches being played out each month as of January 2017, crudely 800 million net searches on view each day. [1] Search engine progress is a tremendous term which covers a colossal region on web. Natural search are postings on the engine while searching. And those are excluding adverts supported connections (pay-per-click advertisements) [2]. A website must be streamlined and noticeable when it is all around positioned what's more, put on first page in internet searcher results. Internet searcher improvement is a system and set of hypotheses, apparatuses and strategies apply to get site situated and put on first page on common pursuit. It infers if any customer is searching for a site material to your watchword/seek term with the objective that your site should come on first page (probably in initial three positions) of pursuit postings which empower the most extreme opportunity to have a tick on your website.

## II. WORKING OF SEO

### A. On-Page Optimization

On-page SEO is an imperative factor in getting your posts positioned at the topmost idea of the search results page. You can have accomplishment without purposely actualizing this procedure on each post, however in case that you make it a need to optimize every one of your blog posts with these on-page SEO strategies, you will without a doubt accomplish substantially more consistent outcomes. On-page enhancement process includes those segments straightforwardly associated with your site

**(i). Page Title**

For web index rankings, title names are the most fundamental part for the internet searcher significance. The title tag is in the <head> territory of the HTML record, and this the main piece of "meta" information about a page that impacts the most essentialness and positioning [3]. It addresses the point and essential watchwords of the particular site page. It is the mix or string of the words/content portrays by the tag <title> in HTML archive. Following is the language structure of Title tag in HTML

<title> Your web site Title </title>



Fig 1. Page Title of website

**(ii). Description Tag**

Website page Meta depiction tag contains brief succinct information about the page content. Routinely it is appeared after title in web index results page (SERP). The Meta portrayal tag is basic in light of the fact that you can utilize it as a method to pass on your promoting message and entire web search tool guests to tap on your posting instead of clicking your resistance [4]. The Meta depiction tag is in the <head> fragment after title tag. The linguistic structure is according to the following:

<Meta NAME=" description" CONTENT "your website description.">

About 1,840 results (0.65 seconds)



Fig 2. Description Tag of website

**(iii). Heading Tags**

Heading labels are basic as these are highlights of the theme of the site. Heading names are given more worth by means of web indexes than an ordinary body copywriting. Utilizing your concentrated on

watchwords is basic in heading and subheading names. Normally heading marks are made from H1 through to H6. Heading names informs the web search tool robots concerning the point of the site. The H1 tag has the most centrality and H6, the least and a different way. Keeping code to H1 through H3 heading level is an ideal strategy. The linguistic structure of heading tag is according to the following:

<H1>Heading Title</H1>

**B. Off-Page Optimization**

Off-page optimization the same invalid webpage optimization is suggesting to the factors that have a result on your website positioning in characteristic search results specifically related with outside conditions (comprises search positioning factors not situated on your website). It is parceled into two important portions. These are site's history and Links back (outbound links) to the site. The most important factors of off-page optimization include the following: [5],

- The proportion of sites which connecting to your site I-e outbound links.
- The PageRank and connection prevalence of the websites connecting to your website
- Google Sitemap arrangement and accommodation by means of Google webmaster.
- RSS syndications and numerous different factors [5].

**(i). Link Popularity**

Link popularity refers to the total number of web locales that link to your website, in different ways link popularity is the blend of all sort of back links (for example from forums, blogs, RSS etc.) to your website. It likewise incorporates the popularity of the web destinations just as substance importance of those linking to you.

**(ii). Link building**

Link building is fundamental in site design improvement process and a key segment in off-page advancement. Directing a link building exertion will improve web site page's link fame, increment the site traffic and in the long run improve the internet searcher positioning. Links are not equal; every site on the web has some undeniable worth and inherent regard contingent on its inquiry positioning elements. Destinations that are linked to high-authority locales change into higher in the master chain themselves [6].

There are different strategies to manufacture links which are discussed as follows:

**(a). Reciprocal Linking**

A proportional link is a shared method for link building in which two sites swap their links to one another. For instance, Website www.a.com has an inbound link to www.b.com in return of the link of www.b.com. Proportional links has the least worth regarding web index rankings in any case, it is incredible to get rank and lift web traffic.

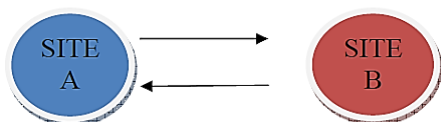


Fig 3. (Reciprocal Linking)

**(b). One -Way Linking**

Single direction linking is the best way and generally esteemed. Single direction link is the point at which another site is linking to your site and you have not linked back. Regularly, sites don't give link easily. Typically the method of single direction linking is tied in with purchasing links. Site links from high PageRank site are dynamically expensive.

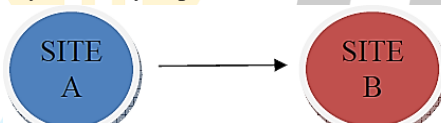


Fig 4. (One-Way linking)

**(c). Three- way or Triangular linking**

In three different ways linking, site an offers links to site B, and site C links back to site A. For instance, site a.com needs a 3-path links from site b.com then site a.com will include link to b.com its accomplice or registry site which is c.com and will ask a.com back link adjacent b.com. Along these lines both site a.com and b.com get a single direction link. Along these lines of linking additionally called triangular linking

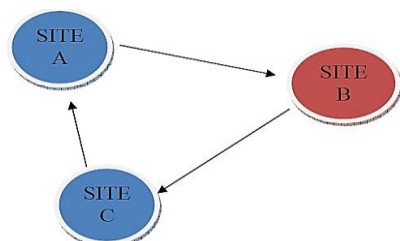


Fig 5. (Three way or Triangular linking)

**(iii). Improve Click Property**

Click popularity is a significant factor for site rank in web indexes. The popularity of the page consistently clicked will be high. Right when a guest clicks a site

from SERPs, web index will offer some certain esteem. In any case, don't endeavor to imitate clicking without any other individual site, on the grounds that the clicks from a lone IP will be checked just once [7].

**(iv). Google SEO Tools**

Google web search tool hold the 95% of the world hunt showcase. There are some successful web crawler instruments introduced by Google. Each internet searcher professional must wears down Google webmaster, Google investigation, Google design, Google catchphrase instrument in the site design improvement process.

**III. CURRENT RESEARCH DETERMINATIONS**

*Aanchal Kakkar* [8] have studied that the PR of page is calculated by google spider once it come in contact with it which has no idea nearly the contented or size of the page or the language and the text used in the link.URL strips off to the parent page when present on the toolbar. With the proper understanding of page rank under different cases we have summarized the result as follow:

- I. The normalized probability distribution of page rank will be 1.0
- II. When number of pages includes and when we start page with 1, the little iterations required to converge to a suitable result.
- III. No negative value can be estimated.
- IV. Each time an algorithm is executed it gets closer to the final value.

Kai Li [9] We have study that PSM and SEO are two main advertising services available to advertisers in search engine marketing. In this study, we build two mathematical models, one in microeconomic method and another in game theoretic method, to analyze the competition between PSM and SEO. Search engine quality, which is divided into two dimensions: algorithm effectiveness and algorithm robustness, is introduced as an important factor in the model. Based on search engines, algorithm effectiveness brings in online searchers which are recipients of online advertisements that are the revenue source of both PSM and SEO. Algorithm strength helps search engines to keep away from SEO firms' chasing and reduce the noise made by SEO firms in organic searching. This enhances the searching experience of online searchers in organic searching, and also positively influences the searchers' clicks of sponsored links. SEO firms always have motivations to chase search engines in search algorithm, so search engines have to keep running away to maintain their algorithm robustness. However, when a search

engine has a relatively low level of algorithm effectiveness, keep investing in algorithm robustness contrarily reduces the total revenue. SEO is an interesting but not well studied issue in the online advertising area. In this study, we endeavor to break down the supportability of SEO firms, and explore the effect of SEO and different factors on SEP's benefit. A few fascinating bits of knowledge rise up out of the examination of the SEO firms' supportability. To begin with, the supportability of SEO firms depends, in any case, on the promoters' readiness to-pay for web based publicizing. As this valuation ascends after some time, SEO firms offer favorable position over paid inquiry. This outcome is principally because of the diverse estimating arrangements received by the web crawler and SEO firms. Also, algorithm heartiness has a monotonic negative impact on the manageability of SEO on the grounds that it legitimately limits the act of SEO. The viable ramifications, consequently, is that SEP could improve its benefit through steady learning and "outflank" SEO firms, with the goal that its outcomes are less defenseless against SEO practice all in all. Thirdly, algorithm viability decidedly influences the maintainability of SEO firm. All the more imperatively, a web search tool is conceivably subject to "without riding" impact from SEO firms, in view of the parasitic idea of these organizations. As the web index put resources into algorithm adequacy improvement, SEO firms may likewise profit by this venture since more web crawler client implies more clicks in the two sides of web crawler. So as to receive a more full reward from speculation, SEP has the motivating force to improve its algorithm vigor in the meantime. This marvel has been as often as possible saw in Google Dance Syndrome, a purposeful endeavor at improving its algorithm strength. Because of the extension requirement and the kind of the investigation, there are a few confinements to this examination. Initially, the uniform circulation supposition of publicists' readiness to-pay is shortsighted as a general rule. Second, the model is constrained in publicists in a single industry. One conceivable augmentation is to demonstrate industry distinction and promoter contrast with a various leveled circulation and in this way, separate the two impacts. The outcome could yield administrative experiences as far as market division. Then again, level separation model could be utilized to address the promoter heterogeneity in keyword inclinations.

WangBin [10] we have studies that University website for search engine optimization strategy research has broad application value, it has profound guiding significance to improve website ranking, this article

from the website design, keywords, web pages, links and so on several aspects to discuss SEO technology optimization, and do search engine optimization (SEO) during the practice process for our web site for. Through SEO optimization, our website has been well promoted, which has raised the visibility of our college and has established a good brand effect.

Surbhi Chhabra [11] analysed that each web search tool is partitioned into assorted modules including crawler module on which web index depends the most. A crawler is used to download and store web pages for internet searcher. For any crawler two issues should be considered. First the crawler should organize and select a strategy to decide which pages to download next. Second, It needs to have optimized and robust structure with a goal to download maximum pages per second including accidents and crashes. Web crawler is focused on data and can be orchestrated to target what we require. A superior crawler for large search engine needs to address the accompanying issues: It needs a profoundly advanced framework design that can download an extensive number of pages every second. It ought to have great memory administration framework to dodge the memory stack overflow. It needs to choose which pages ought to be downloaded next. It must be strong and solid against crashes. It has to be managed by the accessible resources and web servers. To construct a viable web crawler, different issues should be considered because the size of the web is enormous and such far reaching scope is exceptionally troublesome. Several crawling strategies or algorithms are utilized for downloading web pages from the World Wide Web. There are numerous more procedures and techniques that might be considered for crawler to enhance its execution and performance. Focused Crawler is intended for highly advanced users who crawl over a small part of the internet for specific topic. Focused crawler is created to extort only pertinent website pages of intrigued subject from the Internet with quicker recovery speed furthermore helps in giving Clean client submitted content against a sheltered white-list, to forestall XSS attack. Due to constraint of network bandwidth and time a web crawler can't download all pages, it is critical to pick the most imperative ones amid the crawling process and going by numerous immaterial pages.

Vishakha Chilpipre [12] We have analyzed that survey the working of web search engine and analyses the role of web search optimization, web crawler, web mining. Increase in the user of web facility results in insert, delete and manipulate of huge amount of data in web so

study of Search engine optimization, web crawler and web mining for search engine helps to provide an efficient structure to the system that will handle web data as per the user convenience. Also we have discussed some of the challenges that web search engine faces in web. To extract, manipulate and presentation of information are discussed in terms of SEO, Web crawling and Web mining on which search engine rely.

Sana [13] we have study that SEO strategy—and using the right tools to help you along the way—is crucial to your success in search. Equally important is ensuring a proprietary advantage that your competitors will be hard-pressed to duplicate. We outlined a long-term strategy for creating a powerful SEO roadmap specifically tailored to you and your business. Search Engine Optimization is constantly changing as new aspects come into play, and others go. Fundamentally, businesses need to recognize the two crucial fundamentals for high-quality SEO, on-page and off-page. On-page SEO refers to what a publisher can control directly, whereas off-page SEO basically relies on user behavior, social engagements, visitors, and other publishers. Organizations must recognize - to have the top spots in the search engine results page, recognition, support and the backing of others is required.

#### IV. CONCLUSION

Search Engine Optimization (SEO) is a long-term strategy, which should lead to a higher ranking on search results page and, subsequently, bring higher traffic to a website. Although the result of optimization is not guaranteed, the right mix of off-page and on-page optimization techniques is extremely vital. Creating a unique and interesting website content is an absolute necessity. User-friendly URL structure, clear domain name, relevant titles, descriptive headings, and structured source code with quickly loading interface are another suggestions imperative to on-page SEO. Publishers cannot forget about the off-page aspect either and must focus on building quality links with relevant partners.

In the future SEO will be an important tool to rank the website. With the help of SEO, we can show any keyword in search results like search engine like google and Bing on your website page. In the future, Google will rank the website on which the article above is 500 to 1000 words, as well as its less bounce rate, because there are many such websites on Google that the article's quality of content is very poor and this website appears at the top of Google's search engine, If Google promotes

less bounced rates website, then we can get the quality of content website on Google.

#### V. REFERENCES

1. Enge, S. S. (2018). *The Art of SEO* (illustrated ed.). O'Reilly Media, Inc., 2018.
2. James, K. (2011). *Life outside the Google top ten*. Retrieved 02 05, 2011, from Kilroy James: <http://www.kilroyjames.co.uk/2008/05/life-outside-the-google-top-ten/>
3. Eric, S. S. (2009). *The Art of SEO* (illustrated ed.). O'Reilly Media, Inc., 2009.
4. Kristopher, J. (2010). *Search Engine Optimization: Your Visual Blueprint for Effective*.
5. II, T. D. (2008). *Advanced Search Engine Optimization: A Logical Approach*. Lulu.com, 2008.
6. Rice, S. L. (2009). *Mastering Web 2.0: Transform Your Business Using Key Website and Social Media Tools* (illustrated ed.). Kogan Page Publishers, 2009.
7. Saini, R. K. (2011). *A Study on SEO Monitoring System Based on Corporate Website Development*. *International Journal of Computer Science, Engineering and Information Technology (IJCSEIT)*, , 1 ,No.2, 49
8. AanchalKakkar (2015) *Search Engine Optimization: A Game of Page Ranking*, IEEE. (978-9-3805-4416-8/15) pg. 206-210
9. Kai Li (2014) *Running and Chasing - The Competition between Paid Search Marketing and Search Engine Optimization*, IEEE. (978-1-4799-2504-9/14) pg. No. 3110-3119
10. Wang Bin (2018) *A Study on Tactics for College Website at Search Engine Optimization*, IEEE. (978-1-5386-4794-3/18) pg. No. 259-263
11. Surbhi Chhabra (2016) *Inducing Factors for Search Engine Optimization Techniques: A Comparative Analysis*, IEEE. (978-1-4673-6984-8/16) pg. No. 452-455
12. Vishakha Chilpipre (2017) *Survey on Search Engine Optimization Techniques*, *IJSRD - International Journal for Scientific Research & Development*| Vol. 5, Issue 09, 2017 | ISSN (online): 2321-0613 pg. No. 867-869
13. Sana (2014) *Search Engine Optimization a Technique*, *IJSRD - International Journal for Scientific Research & Development*| Vol. 2, Issue 01, 2014 | ISSN (online): 2321-0613 pg. No. 775-778