

Artificial Intelligence (AI)'s Role in Search Engine Optimization (SEO)

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Abstract: This article describes the relationship between AI and SEO, the ways in which SEO ranking factors can be enhanced using AI. Some aspects of AI are also discussed, along with few applications of AI in SEO areas are briefly outlined in this paper.

Keywords- search engine optimization, artificial intelligence, rankbrain, tools

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I. Introduction

Now-a-days Artificial intelligence has been applied into various areas of human daily life today. It is used in education, health, investment [1], court purpose, cyber security [2] and transportation. Artificial intelligence has been useful for people to obtain reliable and their required information on the Internet through optimization on search engines. Results of 2017 SEO Proficiency in Marketing Survey showed that 96% SEO experts states that SEO strategy can benefit more if associated with AI, 73% agreed that AI can analyze the data for SEO needs, 61% said that AI can help locate anomalies in their SEO strategy and fix it, 58% believe that AI allows their SEO strategy to beat its competitors, 49% even think that AI can beat Google RankBrain technology, and 41% considered that AI eliminates the need for exact phrases as keywords [3].

II. AI and SEO: How Related

SEO is a set of techniques and practices that enable a site to get more traffic from search engines [4]. This is done by raising a key word or phrase in search engines rankings [5]. SEO is generally done by the site owners that modify the characteristics of site so that it may be received by the search engine algorithms [6].

The AI isn't always based on a static method, alternatively it's a constantly evolving machine designed to classify, categorize and present the data that is most possible to meet the requirements of customers at that unique time. The skills of AI will significantly enhance the future of SEO beyond simple keyword phrases.

In the following four ways AI improvements will affect SEO:

1. Increasing importance of SEO optimization for visual content
2. More emphasis on content quality, relevance, and focus
3. A more selective approach to link building
4. Going beyond web optimization only with mobile and voice search

There are three different categories of AI:

- Artificial Narrow Intelligence(ANI)
- Artificial General Intelligence(AGI)
- Artificial Super Intelligence(ASI)

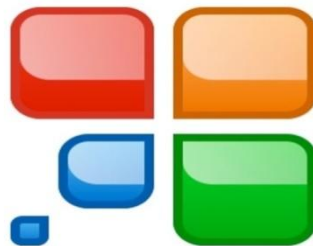
Artificial Narrow Intelligence (ANI) is used for unique specific things. Artificial General Intelligence (AGI) is the heading given when the AI is capable of achieving the humanlike feats. Artificial Super Intelligence (ASI) is the heading given when the AI has reached a capacity that is beyond the abilities of human Intelligence.

III. Increasing SEO Ranking Factor with Artificial Intelligence

3.1. Use SEO Tools/Software

A number of free/paid tools finds on-page problems and resolve them, allow you to analyse your competitor's website, identify opportunities for growth, improve your keyword list, tracking and analysis of your traffic report. This type of tools provides robustness services. Some basic SEO tools used are:

Fig 1: SEO PowerSuite



SEO PowerSuite:

A complete SEO software solution like SEO PowerSuite will ensure that you are getting quality links and optimizing your website, and will protect your site from the penalties and algorithm changes that the AI may perform. SEO PowerSuite is a tool that will help you stick to the guidelines, to not get bad links and to help you quickly audit your site for problems, monitor your keyword rankings and keep an eye on your competitors to see if you can get their best links.

Fig 2: SEMrush



SEMrush:

A tool like SEMrush finds on-page problems and fixes them, allows you to evaluate your competition, identify opportunities for growth, enrich your keyword list, create content and track and report results. This is a tool used by eBay, Overstock and ClickZ, for the robustness of its service.

3.2. Adjust Keywords

As the way in which we search has changed, search being performed on different devices and in different locations, it is only natural that the use of keyword phrases to change too. It is recommended to select one main keyword phrase and adjust and optimize it for related phrases throughout. This means utilizing the keyword phrase in various ways, as an example, if your keyword phrase is 'Red Colour Apples' then it is best in order to avoid repeating the exact phrase over and over, and instead to include variations of it throughout out 'colour apples', 'colour apples in red' or 'red colour-apples'.

3.3. Think about Mobile Device

Nowadays, most of the people are looking for their queries on mobile devices. Mobile is the most important device to boost your brand and improve your business. Google has put more weight on sites to become increasingly mobile, friendly and in doing so it's possible to improve business and brand awareness.

3.4. Voice based Search

Voice based searches are normally longer and more conversational in tone and therefore it is important to consider this as part of your sites SEO strategy. Content that shares the casual, conversational tone of possible voice searches is one way to optimize for this and doing some keyword research for informal queries will even lead you to create content material that can easily search through voice search in addition to written queries.

3.5. Importance of Content

Making a great content is the important factor for online success and this holds true in the globe of AI and SEO. Attractive engaging content across a number of websites, blogs, videos and guest blogs means that should one piece of your online presence be affected by an AI.

IV. Use of AI in SEO

Some of the applications of artificial intelligence in search engine optimization are:

4.1. Digital Marketing

AI is utilized in digital marketing to collect data on ads targeting, to decide the relevancy of content, to perceive customer segments for cross-selling, for streamlining ads campaigns and evaluating which emotional values have the maximum effect on their targeted market.

4.2. Polidoxa

Develop Polidoxa, a trust-based search engine algorithms that exploit the behaviour of the network users, as well as a social network based on trust and holonic system for social security and privacy [7]. Polidoxa developed with the principles of swarm intelligence that mimics the behaviour of colonies of insects in a collaborative community. Polidoxa use swarm intelligence to achieve collective intelligence of social networks. Polidoxa is claimed to accelerate in links evaluation, an evaluation of links coming from other pages, from a matter of months to just a matter of minutes, depending on network activity. The relevance of information is decided by social network users that cannot be influenced by SEO which is run by another party.

4.3. Commercial Packages

SPSS Clementine is an IBM software developed with ANN for data mining [8]. SPSS Clementine has six web analytics application modules: SEO, user segmentation and automated visits, analysis of user behaviour and site activity, the activity of the homepage, activity series analysis, and trend analysis. SPSS exploit internet database and allowing it for an analysis of a number of different marketing campaigns conducted by a SEO analyst to obtain high positions in search engines [9]. Other SEO commercial packages based artificial intelligence is SearchDex SDX Hyperloop [10].

4.4. Support Vector Machine (SVM) Application

Develop an application of SVM in achieving the goal of increasing find ability, i.e. optimizing webpages so that it is more optimal discovered by user who use search engine [11]. This is done by knowing how well a document is separated from the whole collection, and the degree to which the keyword of related topics can be captured by the document. This model can also be used to predict the degree of complexity of a keyword and predicted the number of aspects of the topics that can be captured by the search engines.

V. Conclusion

Use of artificial intelligence in SEO is affected by different criteria used in selecting the site by search engines as well as the confidentiality of the algorithm used by SEO companies. However, a number of efforts have been made to apply artificial intelligence in SEO also in various ways.

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