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How a Marketing Firm Applies AI and Machine Learning to SEO Processes

AI and machine learning is making it easier for small businesses to grow their online presence and reach. Digital marketing agency Ellipsis explains how it uses AI/ML.

[Karen D. Schwartz](#) | Sep 13, 2023



for a modest fee. Today, 43% of all websites use WordPress in some capacity, according to WordPress theme developer Colorlib.

Because of its low cost, ease of use, and simplicity, small businesses make up the vast majority of WordPress users. However, those small businesses typically operate with limited marketing teams, making it challenging to expand their reach and marketing efforts.

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Recognizing this challenge, marketing expert Alex Denning started a digital marketing agency, Ellipsis, in 2018, dedicated to supporting WordPress-based businesses. Ellipsis focuses on optimizing its customers' [search engine](#) rankings.

Inefficient Manual SEO Processes

In its first few years, Ellipsis and its small team managed search engine optimization (SEO) tasks in the same way its competitors did – through manually processes. The laborious approach involved the collection of massive amounts of data and making decisions about strategies to pursue.

“We had to manually look through competitor results to try to understand what people were searching for from that keyword,” Denning said. “Humans typically aren’t very good at this task, but that’s all that there was. The only technology we had was a giant set of Google Sheets, and our results were fairly inconsistent.”

While Ellipsis’ customers weren’t complaining, they did tend to cancel their contracts once they expired. Denning determined that the primary problem was making the wrong keyword selections too often.

“We did the same thing as everybody else,” he explained. “We would pick a target topic area and look for other things people might be searching for relevant to the client’s product. Then we would make subjective decisions against that.”

To grow Ellipsis, Denning knew he had to improve the keyword and content process. That meant [finding a more automated method](#) to address issues like keyword targeting and on-page optimization

It was about that time when Denning ran into a friend who was working on innovative applications for machine learning at a university. The friend suggested that [machine learning](#) could be a potential driver for growth.

“I thought machine learning was science fiction, but I went home and Googled it and found out that wasn’t true at all,” Denning said. “But we had nothing in place to even begin. We didn’t even really have a dataset.”

Denning soon came across Akkio, a generative AI platform that specializes in analytics and predictive modeling. He integrated the tool with his basic spreadsheets and used Zapier to help integrate applications and automate workflows. Using those tools, Denning and his small team began developing what is now Falcon AI, a system designed to increase the success of SEO content via optimized keyword selection. Eventually, he aimed to use Falcon AI to customize SEO for each of Ellipsis’ clients.

Building Falcon AI

Despite lacking a master database, Ellipsis tapped into years of client work to train the Falcon AI system and build its knowledge base. “We were able to say, ‘Yes, this works,’ and, ‘No, this didn’t work.’ Then we just started including more information around that,” Denning said. From there, the team enriched the data.

The first version of the tool was up and running within a few weeks. While it wasn’t perfect, it went light years beyond Ellipsis’ original process.

Version 2 followed 15 months later. Denning brought in a consultant to help architect a database built in [PostgreSQL](#), which ran on a hosted version of Salesforce Heroku. The project involved migrating data from Google Sheets and resulted in a dataset that was as much as 100,000 times larger than the original dataset, he said.

At the same time, the team rewrote internal scripts, moving them to the proper cloud infrastructure, and established processes for regular updates. Additionally, the system uses Akkio to prepare data for machine learning.

With all these pieces in place, the database now enables Ellipsis staff to train models. The staff uses [ChatGPT](#) to write SQL queries, streamlining the process and improving model training.

“A year ago, I spent four weeks [talking to] a SQL expert ... trying to work out how to write a query and make it do what we wanted,” Denning said. “It worked, but didn’t quite do what I wanted, and it ended up being a very opaque 200-line query. Then ChatGPT comes along and says, ‘Here is the code.’”

Falcon AI Version 2 went live in September 2022. In a nutshell, Ellipsis staff retrieve the data, make predictions, and provide these insights to the user. Today, it’s much easier to pinpoint high-performing keywords more accurately because the system generates a range of valid option and then identifies the best choice among them. The system is primarily used internally by Ellipsis analysts working on behalf of clients. However, clients also have access to a SaaS-based version.

James Baldacchino, Ellipsis’ head of strategy, joined the company during the early stages of Falcon AI’s development. “As [Falcon AI] evolved more and more, it genuinely started having a massive difference in the performance of our work,” he said. “Crucially, not just in terms of efficiency, but in terms of subjectivity. It has basically eliminated the guesswork and subjectivity.”

Clients have taken notice of the benefits. For example, one customer saw a 101% increase in organic traffic within six months, while another saw a 48% boost in organic traffic within three months, according to Ellipsis.

AI and SEO’s Future

partial alternative to search, since generative AI specifically focuses on generative approaches to answers, rather than content discovery.”

The future for AI and machines learning in SEO is bright, though there are a few caveats to keep in mind, Green said.

“Using AI and ML across search experiences to proactively steer conversations and answering questions opens the door to the idea of Influence AI,” Green explained. Influence AI entails automating digital interactions to influence user choices through the application of behavioral science techniques.

“We already see Influence AI occurring on owned [digital] channels to support complex buying decisions and drive ecommerce purchase,” Green added. “Since search plays an important role in every stage of the customer journey, it is not a far leap to see the benefit of applying this combination of technologies to nudge customer decisions and accelerate the journey from exploration to purchase.”

Looking Ahead

Now that the Falcon AI system is working well, Denning has had time to explore other applications for it.

One of the most successful uses has been building predictive models to determine whether new leads from contact forms will convert and which services they might be interested in. The process involves downloading the contact form data to a CSV file and adding a new column to indicate whether the inquiry converted, whether they bought from Ellipsis, and the customer’s lifetime value with Ellipsis. “So, when someone sends an inquiry now, we can notify [staff members] internally whether the customer has high conversion potential or not,” Denning described.

Up next, Denning mentioned plans to expand the use of [robotic process automation](#) (RPA) within Ellipsis. Today, the company uses RPA to automate about a half million actions each month, and he wants to explore its additional potential.

About the author



Karen D. Schwartz is a technology and business writer with more than 20 years of experience. She has written on a broad range of technology topics for publications including CIO, InformationWeek, GCN, FCW, FedTech, BizTech, eWeek and Government Executive.

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