

Better Fishing Through Machine Learning? It's Happening Today



Executive Summary

[Fishbrain](#) is an app that lets anglers log their catches, network with other enthusiasts, and find the best places to fish. Fishbrain worked with AWS Partner Network (APN) partner Modulai and used Amazon SageMaker to build the models that power a new version of BiteTime, its fishing forecast.

An End to Fishing Folklore?

As one of the world's oldest—and most popular—hobbies, fishing has developed its own playbook of folklore, but a new app is turning years of received wisdom on its head.

Fishbrain is the social network for anglers. It's free to use, but users can pay for advanced features, including BiteTime, a service that predicts where and when to fish for certain species.

Taking the Guesswork out of Fishing

To make sure paying customers get the most for their money—and to attract new ones—Fishbrain wanted to make BiteTime as accurate as possible. “We’re lucky enough to have one of the richest datasets about fishing outcomes on the planet,” says Rickard Svedenmark, chief technology officer at Fishbrain. “We have data on 7 million catches from our user base, of which we use 2.5 million as a basis for our training sets. We wanted to make better use of that data to provide a better service.”

Most fishing forecasts use weather data coupled with assumptions about how likely a fish is to appear under given conditions. But Svedenmark figured Fishbrain could build machine-learning models based on its users' catch data to predict more accurately the likelihood of catching fish.

Amazon SageMaker: “an Easy Choice”

Fishbrain had no machine learning skills in-house, so it turned to local specialists [Modulai](#) – a member of the [Amazon Web Services \(AWS\) Partner Network](#) (APN). Fishbrain already used AWS for almost all its infrastructure, so rather than build a machine learning solution, Svedenmark chose to use [Amazon SageMaker](#). This service covers the entire machine learning workflow to label and prepare data, choose an algorithm, train the model, tune and optimize it for deployment, make predictions, and take action.

Svedenmark says, “We don’t see the point of running our own infrastructure when AWS provides a more effective service that’s easier to use. I want my engineers to focus on what’s unique to us. Amazon SageMaker was an easy choice to help us get BiteTime into production quickly.”

About Fishbrain



FISHBRAIN

Fishbrain is an app that lets anglers log their catches, network with other enthusiasts, and find the best places to fish. The app has more than 9 million users and covers more than 1.7 million fishing locations.



The Faster Path to Market

Two Modulai engineers worked with a Fishbrain team to train the first machine learning models in just a couple of weeks.

The models are based on data about the fish's species, weight, and length from Fishbrain's database running on [Amazon Relational Database Service](#) (Amazon RDS). The team enriched this data with further information about location, time, weather conditions, and the lunar cycle. In the future, this metadata will be added automatically as anglers log their catches.

Using Amazon SageMaker, bolstered by the expertise of Modulai, Fishbrain trained models and got its product to market quickly without having to set up a machine learning infrastructure. "We had our data experimentation done in less than two months," says Puya Sharif, Modulai co-founder and machine learning engineer. "And the developers had a releasable product ready a couple of months after that."

"Having an AWS machine learning partner allowed us to move instantly instead of spending months upscaling and building tooling. Time to value was important for us and Modulai using AWS met that goal perfectly," adds Svedenmark.

The Data-Driven Fishing Forecast

Svedenmark believes that the new version of BiteTime brings more value to its premium users. "We got feedback from users telling us that they caught fish in places and at times they would never have expected," he says. "We hope to see a jump in the number of users that pay for our service as word spreads about how good BiteTime is."

But Fishbrain is not content to stop now. As it expands into new markets, it must add new species, maps, and features. Sharif says that adding a new species or location takes about an hour to prepare the data, then a further 1–3 days to hypertune the model.

The team can understand how well models are performing by looking at catch data, but it wants to improve the models further by understanding how many fishing hours went into catching the fish that its models predict. That way, it can understand which models are the most accurate.

"We will continue to make BiteTime even more valuable by adding more data sources," says Svedenmark. "Using Amazon SageMaker, that's easy to do."

About Modulai

Modulai is a machine learning and artificial intelligence company. It has teams of data scientists and engineers to help companies gain value quickly from their projects.

