Case Study

Gousto

Gousto Is Using Graph Technology to Personalise Its Ingredient Lists

INDUSTRY
Food & Retail

USE CASE
Real-Time Recommendation Engine

GOALS
– Navigate user choice and deliver a more flexible and personalised service to end-users
– Gain better data insight into what customers were buying or not buying

CHALLENGE
Lack of clarity on what drives customer food item choices

SOLUTION
Use Neo4j and Cypher to build an internal ingredient attribute data model using both collaborative- and content-filtering techniques

RESULTS
– 30 % increase in the number of customers selecting recommended recipes
– More accurate and sustainable product sourcing resulting in better cost control

As part of UK-leading recipe box company Gousto's mission to keep customers at the heart of its business, Gousto needed a way to give its users more of what they want – tailored menus catered to their individual needs.

Graph database technology is at the core of its internal data science team's modelling of user choice, combining the best of both collaborative and content filtering approaches to spotting insightful similarities in ingredients and dishes.

The Company

Founded in 2012, Gousto is an award-winning recipe box company that makes home cooking easy and enjoyable by sending perfect measured ingredients and simple recipes directly to customers' homes.

Delivering over a million meals each month and employing 400-plus staff, Gousto plans to help UK families put 400m nutritious meals on their dinner tables by 2025.

The Challenge

A central Gousto value is constantly evolving its product and service to better serve needs and deliver maximum convenience to its customers. In the past year, it has grown its menu to offer even more choice – 30 recipes weekly, across a variety of new ranges (including gluten-free and plant-based). But this presents a challenge: the more choice, the more difficult its menus may be to navigate.

Hence the need for personalisation, said Gousto Data Scientist Irene Iriarte Carretero.

"The sweet spot between convenience and choice is personalisation, so we're committed to using technology to make our customer interactions relevant – making it easier for shoppers to find the dishes they want and offering them an excellent experience at the same time," Iriarte Carretero said.

The Strategy

Gousto needed a reliable methodology to determine what ingredients are combined most often, and for what end, by customers.

"We wanted to capture the often very subtle emotional reactions people have about food," confirmed Iriarte Carretero. "You can have basic recipe similarities for calculating the common ingredients between two recipes, but that isn't sufficient for what Gousto

> "Neo4j allowed us to think about our product in a more fluid and creative way."
>
> – Irene Iriarte Carretero,
> Data Scientist, Gousto

wants to do for subscribers: we wanted to map out all our hundreds of possible recipe and ingredient data combinations to see how everything connects up – to easily explore the relationships in our recipe world."

The Solution

Gousto uses two different data sources: first, a subscriber's previous interactions with the menu, and second, the information it holds on upcoming recipes. This allows the firm to create a recipe similarity measure, providing its menu designers with a good indication of which recipes they think each customer will enjoy most.

Neo4j's graph database technology is particularly adept at capturing subtle interconnections in data and has been adopted as the way to model this less-than-obvious network of associations and connections in food items.

As a result, Iriarte Carretero said the team now has a hybrid recommendations system that combines the best of both collaborative- and content-filtering approaches to finding similarities in ingredients and dishes.

Why Neo4j?

"We researched our options and Neo4j came to our attention, and we loved its functionality and interface," said Iriarte Carretero. "Cypher was also really easy to pick up to let us start playing with the data."

The Result

Now, Gousto has a powerful internal recommendations design tool that produces ever more tailored ways of helping customers.

The recipe design team loves the way they go deep on ingredients and food styles, giving feedback not only just on what customers are buying and rating highly, but also what they're browsing on the website. This detailed level of feedback helps the graph algorithm work out more optimal suggestions.

Since the graph-based system was introduced, Gousto reports a 30% increase in the number of customers selecting recommended recipes.

"Neo4j allowed us to think about our product in a more fluid and creative way – to create inferences from data and ingredient attributes," said Iriarte Carretero. "And when you tie the attribute to what recipes have been most popular, it helps us understand where the gaps are, where dishes are doing well and where there's not enough of them, or a winning combination of ingredients."

"We definitely see that people are reacting well to the recommendations that we've created using Neo4j," said Iriarte Carretero, "so it's all looking promising."

Neo4j is the leader in graph database technology. As the world's most widely deployed graph database, we help global brands – including Comcast, NASA, UBS, and Volvo Cars – to reveal and predict how people, processes and systems are interrelated.

Using this relationships-first approach, applications built with Neo4j tackle connected data challenges such as analytics and artificial intelligence, fraud detection, real-time recommendations, and knowledge graphs. Find out more at neo4j.com.

Questions about Neo4j?

Contact us across the globe:
info@neo4j.com
neo4j.com/contact-us