

Revolut uses machine learning to strengthen fraud detection

The UK fintech company Revolut developed Sherlock, a machine learning-based fraud prevention system, to counter the growing threat of financial fraud. Sherlock continuously and autonomously monitors card users' transactions, and if it finds a suspicious transaction it sends the user a push notification for their approval. Revolut selected Couchbase because of its inherent architectural advantages – including speed, agility, and scalability – that address the ever-changing data needs of users and merchants.

Challenges

- Fraudsters are evolving to beat traditional predetermined fraud detection rules
- A mission-critical application required consistent high availability and high throughput for its rapidly growing customer base
- On average, financial fraud costs institutions between 7-8 cents out of every \$100

Outcomes

- Sherlock's high speed caching enabled machine learning algorithms to continually learn and update rules – catching 96% of fraudulent transactions
- Sherlock evaluates transactions for signs of fraud in under 50 milliseconds for Revolut's 12+ million customers
- Within the first year in production with Couchbase, a 75% improvement over industry standards saved more than \$3M

Industry

- [Financial Services](#)

Customer Application

- Sherlock Fraud Detection

Nosql Solution

- [Customer 360](#)

Use Case

- Fraud Detection
- User profile store
- Digital communication
- [Caching](#)

Product

- [Couchbase Server](#)

Key Features

- [N1QL](#)
- Multi-dimensional scaling
- Cross datacenter replication
- [In-memory database](#)

“For our customers, the loss of \$100 can mean the difference between a pleasant holiday and an experience filled with frustration and resentment. Couchbase has never failed us or our customers.”

— Dmitri Lihhatsov, Financial Crime Product Owner, Revolut

Modern customer experiences need a flexible database platform that can power applications spanning from cloud to edge and everything in between. Couchbase's mission is to simplify how developers and architects develop, deploy and run modern applications wherever they are. We have reimagined the database with our fast, flexible and affordable cloud database platform Capella, allowing organizations to quickly build applications that deliver premium experiences to their customers – all with best-in-class price performance. More than 30% of the Fortune 100 trust Couchbase to power their modern applications. For more information, visit www.couchbase.com and follow us on X (formerly Twitter) @couchbase.

