



News Release

Danske Bank and Teradata Implement Artificial Intelligence (AI) Engine that Monitors Fraud in Real Time

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Leveraging Teradata's Think Big Analytics consulting arm, Danske now employs advanced machine learning to detect sophisticated fraud in banking and mobile payments

Teradata (NYSE: **TDC**) announced today that Danske Bank, a financial services leader in the Nordics, has worked with Think Big Analytics, a Teradata company, to create and launch a state-of-art, AI-driven fraud detection platform that is already expected to meet 100 percent ROI in its first year of production. The engine uses machine learning to analyze tens of thousands of latent features, scoring millions of online banking transactions in real-time to provide actionable insight regarding true, and false, fraudulent activity. By significantly reducing the cost of investigating false-positives, Danske Bank increases its overall efficiency and is now poised for substantial savings.

"Application fraud is a critical, top of the agenda issue for banks, and there is evidence that criminals are becoming savvier by the day; employing sophisticated machine learning techniques to attack, so it's critical to use advanced techniques, such as machine learning to catch them," said Nadeem Gulzar, Head of Advanced Analytics, Danske Bank. "The bank understands that fraud is set to get worse in the near and long-term future due to the increased digitization of banking and the prevalence of mobile banking applications. We recognize the need to use cutting-edge techniques to engage fraudsters not where they are today, but where they will be tomorrow. Using AI, we've already reduced false positives by 50 percent* and as such have been able to reallocate half the fraud detection unit to higher value responsibilities."

Danske Bank's original fraud detection system was largely based on handcrafted rules that had been proactively applied by the business over time. With record numbers of false positives - at times reaching 99.5 percent of all transactions - the costs and time associated with investigation had become significant, with the bank's large fraud



detection team feeling overworked, yet not effectively utilized.

Teradata's Think Big Analytics team began working with Danske Bank in autumn 2016, to augment their advanced analytics team with specialist knowledge about how to utilize data to bring greater benefits to the wider business. The joint team began with building a framework within the bank's existing infrastructure and then created advanced machine learning models to detect fraud within millions of transactions per year, and in peak times, many hundreds of thousands per minute. To ensure transparency and encourage trust, the engine includes an interpretation layer on top of the machine learning models, providing explanations and interpretation of blocking activity.

From a modelling point of view, fraud cases are still very rare, with around one fraud case in every 100,000. The team has managed to take the false positives from the models and reduce them by 50 percent*. At the same time, they are able to catch more fraud - actually upping the detection rate by around 60 percent*. Danske Bank's anti-fraud program is the first to put machine learning techniques into production while simultaneously developing deep learning models to test the techniques.

"All banks need a scalable, advanced analytics platform, as well as a roadmap and strategy for digitalization to bring data science into the organization," said Mads Ingwar, Client Services Director at Think Big Analytics. "For online transactions, credit cards and mobile payments, banks need a real-time solution - the state of the art AI-driven fraud platform we have developed in collaboration with Danske Bank scores incoming transactions in less than 300 milliseconds. It means that when customers are standing in the supermarket and buying groceries, the system can score the transaction in real-time and provide immediately actionable insight. This type of solution is one we'll begin to see throughout organizations in the financial services industry,"

Danske Bank will share details about its AI-powered engine for fighting financial fraud at the annual Teradata PARTNERS Conference in Anaheim, California, on Monday, October 23 at 11:30 a.m.

* Pre-production measures

Relevant news links

- **Teradata PARTNERS Conference and EXPO**
- **Blog: Danske Bank: Innovating in Artificial Intelligence and Deep Learning to Detect Sophisticated Fraud**
- **Case Study: Danske Bank Fights Fraud with Deep Learning and AI**
- **Video: Danske Bank: Innovating in Artificial Intelligence and Deep Learning to Detect Sophisticated Fraud and be the Most Trusted Bank in the Nordics**

- **Top Analyst Firms Name Teradata a Leader in Six Evaluation Reports**

About Teradata

At Teradata, we believe that people thrive when empowered with trusted information. We offer the most complete cloud analytics and data platform for AI. By delivering harmonized data and trusted AI, we enable more confident decision-making, unlock faster innovation, and drive the impactful business results organizations need most. See how at **Teradata.com**.

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