Accelerating Snap Finance's Machine Learning Approach to Comprehensive Credit Assessment

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Background

More than a third of U.S. consumers have a subprime credit score of under 670 with 46% of them relying on financing and 58% saying financing makes their purchases more affordable. Among those with credit issues, just 14% have used a credit card to buy a major appliance, compared with 51% of those with higher credit scores.

The consumer finance analysis industry is critical in managing credit risk and ensuring the financial stability of lending institutions. Traditionally, this industry has relied on conventional credit scoring models and historical data to evaluate the creditworthiness of individuals for issuing loans. However, these methods often fall short in accurately assessing risk, particularly for consumers with limited or poor credit history, leading to less-than-ideal payment options.

Purpose

Snap Finance saw traditional credit scoring was largely influenced by stringent rule-based methods and not very flexible. Launched in 2012, Snap Finance aims to develop more advanced credit assessment tools that could leverage extensive data and sophisticated algorithms to better serve a broader customer base that would typically be turned away. Their mission is to integrate technology, data, and non-traditional risk variables to create a platform for consumers to secure the financial support needed for essential purchases like furniture and car repairs.

Snap Finance employed cutting-edge machine learning algorithms and high-performance computing, that diverged from traditional methods and allowed them to perform more accurate creditworthiness assessments and offer lease-to-own purchase and loan options with flexible payment plans, specifically designed for underserved consumers. Their methods reduced financial risks and empowered consumers by providing them with access to funds for essential purchases in times of need. With this model that not only looked at the credit score, but also at credit background, spending habits, income, and numerous macroeconomic factors—such as inflation rates, season, and location—Snap Finance's credit risk assessment algorithm viewed borrowers with a more holistic and human lens, granting traditionally risky borrowers a better chance of a solution.

> **"The Exxact GPU servers that we purchased sped up model training by over 10x and unlocked new avenues for product growth."**
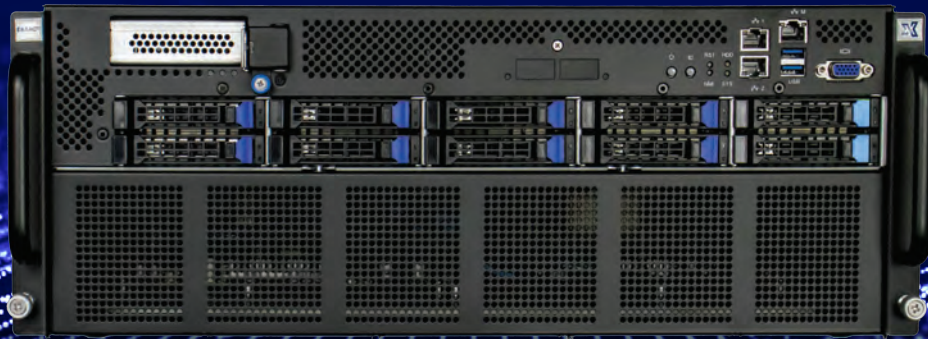
Challenge

With a constant influx of new data and the necessity for timely and relevant information, Snap Finance needed to train their models frequently to stay up-to-date and reliable. As Snap Finance's machine learning models grew and additional parameters were introduced, they recognized the need for purpose-built hardware to accelerate their training processes.

Senior Machine Learning Engineer, Eric Brown, acknowledged the prolonged training times on their existing off-the-shelf commodity hardware was inadequate for continuous and iterative training. Their monthly retraining cadence was hindered by hardware that took weeks to complete the training.

Solution

After contacting various vendors, Brown discovered **Exxact** on NVIDIA's list of recognized elite solution integration partners. Exxact stood out due to their easy-to-work-with team and competitive pricing. With Exxact's assistance, Snap Finance deployed multiple eight-GPU servers, creating a robust on-premises solution leveraging NVIDIA GPUs. This significantly improved their training times and performance from weeks to days.

On-Premises Machine Learning Hardware

An on-premises Exxact high performance computing solution enables Snap Finance to:

Process Large Datasets

Analyzing extensive data points and training machine learning models can be computationally intensive. Exxact clusters provide Snap Finance with the computational power to ingest real-time data and make accurate predictions.

Continuous Training and Learning

The consumer finance industry requires retraining on recent data to stay on top of market trends and the economic landscape. On-premises computing hardware enables Snap Finance to continually train and refine their models without incurring additional time costs associated with cloud services.

Ensure Data Privacy

Ensuring the security of customer data is paramount and an on-premises solution is intrinsically more data secure than uploading and retrieving sensitive data to and from the cloud.

Accelerated Development

Fast dedicated high performance computing solutions can deliver Snap Finance's production machine learning models out faster than ever before. Their production solutions can be provisioned for any task, whether it's training or making predictions. Peak compute flexibility comes only from owning the hardware.

Researching New Methods

Continuous development of new algorithms requires a test bed capable of handling multiple not-yet-optimized pipelines. An on-premises system allows Snap Finance to dedicate entire servers for continuous training and research at no extra cost, facilitating the discovery of new methods and models.

Conclusion

By integrating Exxact GPU-equipped servers, Snap Finance has established a powerful infrastructure that enables continuous training of their machine learning algorithms without the recurring costs associated with cloud services. This robust, on-premises solution not only accelerates model training from weeks to days but also enhances data security and processing efficiency, crucial in the sensitive realm of consumer finance.

The fin-tech and finance sectors are increasingly shifting towards dynamic AI algorithms and machine learning to better analyze and respond to market conditions with real-time data. Snap Finance is at the forefront of this transformation, leveraging cutting-edge technology to create more accurate and inclusive credit assessment tools. This approach empowers underserved consumers, providing them with access to essential financial resources.

Looking ahead, Snap Finance plans to expand its use of GPU solutions for exploratory data analysis and the development of new algorithms. This will enable more extensive prototype testing and continuous improvement of their machine learning models. By investing in on-premises high-performance computing, Snap Finance ensures greater flexibility, cost-efficiency, and the ability to adapt swiftly to market changes.

Ultimately, Snap Finance's partnership with Exxact exemplifies how advanced technology can drive financial innovation, improve credit risk assessment, and empower consumers. This strategic move not only positions Snap Finance as a leader in the industry but also sets a new standard for leveraging AI and machine learning in consumer finance.