A lending company provides consumer financing to merchants and consumers at point-of-sale through more adaptable alternatives to traditional lending programs. Their VP of Data Science found greatly increased productivity through DataRobot’s Enterprise AI platform.

The team built models to help support the company’s projects in various departments including underwriting, accounting, and collections. But building and deploying models using DataRobot’s platform wasn’t enough for them. Instead, they took their cutting-edge innovation with data science and machine learning — coupled with their close relationship with the DataRobot team — to a whole new level. They collaborated with the DataRobot development team to use the DataRobot Optimizer App to improve their procedures and develop new enhancements.

**DataRobot Optimizer App**

The company primarily provides small consumer loans — under $5,000 — to personal borrowers, as well as financing options for merchant stores. Collecting on these loans is a huge part of the company’s incoming revenue every month, putting the Collections team at the forefront of the company’s business.

“We’ve hired a few more data scientists and we’ve got a lot of internal work that I think we could really utilize DataRobot for. Lead scoring for the sales team, optimal settlement amounts, to name a few I think there are unlimited use cases with DataRobot (and data science in general) that we continue to leverage to improve our business.”

VP of Data Science
With tens of thousands of delinquent loans at any given time, there are a lot of calls for the Collections team to make. The more successful calls they have — measured by an industry metric called Right Party Contact (RPC) — the more likely they are to be able to successfully collect on these delinquent loans, and thus bring in revenue for the company. However, with such a great volume of target calls to make and generally low connection rates in terms of reaching the right person or party, any type of optimization or efficiency can make a big difference.

“We determined that there are likely different times of the day that are better to call people, or when you will more likely catch them and be able to connect with them,” said the VP. “So, what we did was build our own sort of optimization app that would score a batch file for all delinquent accounts and optimize over the time of day for the highest likelihood of RPC.”

The team saw an opportunity to leverage DataRobot’s models and working with DataRobot’s new AI Applications team, built a beta version of a DataRobot Optimizer application. The app, powered by DataRobot’s models, was able to make predictions on the best time of day to call and connect with the large number of delinquent accounts, and make those predictions in under 20 minutes. Those predictions are then pushed to an autodialer system used by the Collections team to work more efficiently through an optimized list that tells them whom to dial at which time.

For the DataRobot team, the call time optimization problem was both challenging and rewarding to work on. It fit well with the Optimizer app, but the biggest challenge was the scalability problem. DataRobot could solve their use case, but the response times were too long, especially given the resource constraints of the existing app framework. Dmitrii Kupriienko and Jona Sassenhagen, both members of DataRobot’s AI Apps team, ended up implementing a new specialized optimization algorithm, with 220x improved throughput, meeting the challenge to complete the job within 15-18 minutes.
The solution makes efficient use of DataRobot’s batch scoring functionality. On the app side, the team had to employ highly optimized code to dynamically construct and stream prediction requests to DataRobot’s platform. This new algorithm has been integrated into the Optimizer application and is available for any customer with lead scoring, churn, or upsell use cases. The general reorganization of DataRobot’s API and async infrastructure now forms the architecture for all of the DataRobot apps to make them capable of handling requests of this size.

“Before the Optimizer App with DataRobot was ready, it was probably taking three hours to run these prediction jobs, because it was essentially brute force,” said the company’s VP. “This has freed up a lot of his time and previously unavailable resources that are now utilized for other projects.”

And the results have been significant. In addition to the time freed up for data scientists and analysts on the small team, the DataRobot predictions through the Optimizer App have also led to improved connection rates of as much as 0.1-0.2%. While that may seem small, with overall connect rates of around 3-4%, that makes a significant difference. These results not only had a big impact on the business, but the partnership with DataRobot represented a unique opportunity to lend their frontline insights to a vendor and collaborate on a solution together.

Even before working together to flesh out the Optimizer App, the company’s team had already been impressed with the DataRobot platform and were finding tremendous productivity and data science gains from using it. They particularly loved using the DataRobot Autopilot feature, as well as Feature Selection. And they have plans to keep growing the team and their sophistication with data science and DataRobot.

“It’s definitely cool for me to contribute to the development of this new app,” said the data scientist who spearheaded the project. “It’s great for our partnership with DataRobot in general to be open to working together with us on stuff like that. It’s a pretty cool piece of technology.”

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