

SUCCESS STORY

Australian Schools Boost Student Success, Reduce Attrition by 13% — with AI

When Catholic Education Diocese of Parramatta (CEDP) sought to mine its wealth of data to enhance student success and operations, it turned to DataRobot AI Cloud for automated machine learning.

Challenge

CEDP set out to mine its data to improve student performance and advance operational goals but lacked the internal resources to do so.

Solution

With DataRobot AI Cloud, CEDP applies predictive analytics to improve student achievement, reduce attrition, and spot other opportunities to enhance learning and teaching — and does so without any data scientists.

Result

CEDP predicts student success with 94% accuracy. With those insights, they proactively influence student achievement, and reduced their attrition rate by about 13% - retaining more than 100 students annually and the associated revenue (\$1.2 million) across 80 schools and 43,000 students.

An Ambitious Vision: Data-Informed Student Success

With 80 schools and 44,500 students across New South Wales, Catholic Education Diocese of Parramatta (CEDP) holds a trove of data on its students, from performance to attendance to demographics.

And in that data, Dr. Raju Varanasi, Director, Data Intelligence, saw an opportunity.

“We have 400 dashboards on every aspect of our business,” Dr. Varanasi said. “To unlock that data, we wanted automated machine learning because we don’t have the budget for data scientists.”

94% Prediction Accuracy

CEDP turned to DataRobot AI Cloud to automate its predictive analytics from end to end. The platform stood out for its essential explainability, documentation, and the fact that, as a stand-alone platform, it would plug into CEDP’s existing data sources, mainly Alteryx.

CEDP began applying AutoML to predicting achievement for students in their last year of high school. For that, CEDP could tap into more than a decade worth of data.

DataRobot AI Cloud simplifies the entire lifecycle, from model preparation to building to monitoring. The platform runs through numerous models, enabling Dr. Varanasi and a small team of analysts to determine which one is the most effective. Dr. Varanasi also

**INDUSTRY**

Education

PRODUCTS

DataRobot AI Cloud, AutoML

SUMMARY

With 80 schools across Western Sydney and the Blue Mountains, Catholic Education CEDP of Parramatta serves one of the fastest-growing areas of New South Wales. Whether it’s through their highly successful trade training programs, including at CathWest Innovation College, vocational education and training programs across 26 sites, or its virtual School of Now, CEDP is all about using innovation and new thinking to connect students to real-world opportunities.

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appreciates the ability to drill down into individual student profiles to understand why models scored them a certain way.

Predicting — and Influencing — Student Success

Using the AI Cloud platform, CEDP found that it can predict student achievement at around 94 percent accuracy. This gives teachers and administrators confidence in using those insights to help at-risk students, or guide others to meet or exceed their expected performance, or aid them in choosing the subjects where they'll excel.

CEDP wasn't sure how educators would respond to the insights. But they surprised Dr. Varanasi by asking if his team could predict achievement two years out instead of one — for an even further head start on helping students.

"Once we explained to teachers that we're complementing their efforts, not substituting their efforts, the resistance barriers came down, the adoption grew, and the goodwill about data has grown," Dr. Varanasi said. "And that's a very fundamental shift."

"Predictive analytics helps to unearth current trends in courses and predict future performance," explained Robert Nastasi, Principal at Emmaus Catholic College. "This data can help us focus on preparing the whole student, no matter what pathway they wish to pursue."

Reducing Attrition, Retaining Revenue

In applying AutoML to another challenge, student attrition, CEDP pulled in a variety of features thought to influence attrition, including attendance, missed payments, student engagement, and awards.

By predicting the students that might leave, CEDP takes action to encourage students to remain at CEDP schools, such as offering tuition assistance or other forms of support. With the help of these findings, the school reduced its attrition rate by about 13 percent. By retaining more than 100 students that would otherwise leave, the school also preserved around 1.2 million dollars.

"There is a discernible change in school exits," Dr. Varanasi said. "The benefits can be converted into monetary terms, which more than pays for DataRobot AI Cloud."

Making a Difference Every Day

Machine learning empowers Dr. Varanasi's team despite not having data science backgrounds.

"DataRobot is like having 150 data scientists under my desk," Dr. Varanasi says.

The predictions made through the use of DataRobot AI Cloud make a difference in keeping students engaged, successful, and in CEDP schools.

"We see value in DataRobot AI Cloud," Dr. Varanasi said. "We already see improvements in schools that have taken this to heart. Their curve is on the rise."



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Dr. Raju Varanasi

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