integral analytics™

Data as Simple as Black & White

Hands-on Training Enhances Experience

Nuclear utility saves months of training per student using hands-on training approach

The Situation

A Monitoring and Diagnostics (M&D) supervisor at a nuclear utility had a new hire who must to learn how to build effective models immediately. This M&D program does not have formal training but subscribes to on-the-job training (OJT) for all analysts. In this supervisor's specific situation, he needed a solution fast!

The Task

Integral Analytics was contacted to conduct data analysis training for new analysts. Specifically, Integral Analytics was tasked with providing focused training on concepts the analyst needed to know, like building highly effective models with the utility's machine learning software. This task required focused training and continued mentoring, providing scenarios the analyst would soon encounter.

The Remedy

Training started with the essential basics of the software application that the student is expected to use without the non-essential features learned from vendor-specific training.

The student was taught basic concepts that can be universally applied to any machine-learning application; then, these concepts were demonstrated in the utility's analytics modeling tool. The student learned the basics of analytics model building following industry-recommended practices.

Some best practices include:

- Model variable selection using system and component process knowledge.
- Model alert-setting while optimizing true/false ratios.
- Model data selection using the most innovative methods.

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The Remedy - Continued

- Training, validating, and testing model data sets for optimal performance.
- How to create “actional limits” to avoid nuisance alerts.
- How to use custom tool settings including operational filters and playback functionality to test models prior to deployment.

The Result

After three 2-hour training sessions, the analyst could implement the knowledge gained to build and deploy models using industry best practices, and the student learned the fundamentals of their utility-specific power plant systems. The student understood the context around best practices for use outside of the training.

“THE TRAINING FROM INTEGRAL ANALYTICS WAS INCREDIBLY HELPFUL, BUT IT ALSO LEAVES ROOM FOR THE STUDENT TO IMPROVE AND LEARN ON THEIR OWN.”

-Israel M., Engineer in Training II – Breakthrough Projects

Methods for each topic are based on over 80 years of domain knowledge, analytics experience, and direct customer feedback. Each subject was delivered by an Integral Analytics instructor with hands-on, real-world examples of the entire model development and validation process.

Overall, the student learned how to build accurate models effectively using the software of choice that can detect real-world operational adverse trends.

This level of effectiveness typically takes an average of 3-4 months for an analyst to learn independently without focused expert-derived training and mentoring.

This utility increased the effectiveness of their new employee to that of an experienced analyst within days, not months, saving time, saving money and improving profitability. Customized training is cost-effective, efficient, and available in a variety of formats.

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