

## CASE STUDY

# Data Science & Machine Learning Upskilling Program for a Major International Consulting Firm

## Challenge

To fast-track new hires to tackle high-impact projects, our client sought a comprehensive Data Science (DS) and Machine Learning (ML) upskilling program. Recognizing the industry's shift towards DS and ML, they wanted to equip their workforce with cutting-edge expertise in MLOps, DataOps, AWS, Spark, and GitLab integration for their projects.

## Methodology

Through in-depth interviews and targeted pre-assessments, we identified our client's skill gaps, ML use cases across their organization, and implementation goals. Understanding their transformation vision and existing policies and procedures allowed us to tailor the program effectively.

### Strategic Skill Matching

We recognized the client's critical need to align their training program with client requirements. This ensures new hires are matched with suitable clients, maximizing their ROI by equipping them with the specific skills each client requires.

### Curated On-Demand Learning Library

To optimize the client's existing on-demand course library, we thoroughly reviewed their Udemy library and selected courses that aligned with the program's specific requirements. This saved the client significant time and resources by eliminating the need for independent course research.

This allowed us to incorporate a blended learning approach, combining instructor-led online sessions with interactive exercises and access to a dedicated learning platform with resources and self-paced activities.

The program culminated in a hands-on project that integrates all acquired knowledge, allowing attendees to apply their new data science and ML expertise to solve a real-world problem. By forming collaborative groups, participants gained a deeper understanding of the technology while developing essential teamwork skills. This mirrored real-world scenarios, ensuring a smooth transition into their roles.

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## Solution

Using a combination of courses created by Web Age Solutions, custom developed projects, and official AWS curriculum, we designed a comprehensive machine learning upskilling program tailored to the specific data science needs of our client and its employees. The program covered key topics, including:

- ✓ **Data Analytics on AWS:** AWS' Data Analytics services and capabilities includes S3, QuickSight, AWS Glue, and more. Students learn the data-related aspects of these services, enabling them to select services to match their use cases effectively.
- ✓ **AWS Cloud Practitioner Essentials:** Attendees gain a solid understanding of the Amazon Web Services (AWS) Cloud, independent of specific technical roles. This course also helps prepare learners for the AWS Certified Cloud Practitioner exam.
- ✓ **CI/CD with GitLab:** Git has become the most popular version control system for automating and managing infrastructure. Learners were immersed in the world of DevOps, including version control with Git, GitFlow, and Continuous Integration with GitLab.
- ✓ **Spark and ML at Scale:** Spark and its related technologies allows developers to build, deploy, and maintain powerful data-driven solutions. Attendees learned how to use Spark's ML libraries, focusing on data preprocessing, feature engineering, model training, and evaluation.
- ✓ **DataOps:** Implementing Data Operations (DataOps) practices correctly improves the speed and accuracy of data insights compared to traditional methods. Learners mastered Data Engineering, DevOps, Agile, and Lean Manufacturing principles to improve data analytics and reduce repetitive tasks and manual processes.

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- ✓ **Applied Data Science and Practical ML with AWS SageMaker and AutoML:** Developing and deploying cutting-edge machine learning models solves real-world business challenges. In this course, learners gained a comprehensive understanding of ML and worked with the latest tools and techniques to build intelligent, impactful applications.
- ✓ **MLOps Engineering on AWS:** Machine Learning Operations (MLOps) extends the DevOps practice. This official AWS course taught attendees how to successfully leverage data, models, and code for successful Machine Learning (ML) deployments using Amazon SageMaker.

## Schedule



### Data Science and Machine Learning Program



Week	Mon	Tues	Wed	Thurs	Fri
1	Kickoff Tech check and description of program and pre-test AWS Cloud Practitioners Essentials (Official)	AWS Cloud Practitioners Essentials (Official) WA3292 - AWS Data Essentials	WA3047 - Data Analytics on AWS	WA3292 - AWS Data Essentials	WA3212 - CI/CD with GitLab
2	WA3212 - CI/CD with GitLab	WA3290 - Spark and ML at Scale	WA3290 - Spark and ML at Scale	WA3290 - Spark and ML at Scale	WA3290 - Spark and ML at Scale
3	WA3219 - DataOps	WA3293 - Applied DS/ Practical ML	WA3293 - Applied DS/ Practical ML	WA3293 - Applied DS/ Practical ML	WA3293 - Applied DS/ Practical ML
4	WA3293 - Applied DS/Practical ML	MLOps (Official)	MLOps (Official)	MLOps (Official)	Introduce Project and Teams
5	Project	Project	Project	Project	Project Presentations

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