

# Unleashing Data Science Innovation in Credit & Finance Analytics

## Domino Data Lab on AWS: Efficient, Scalable, and Secure

Financial services firms have been running their businesses on predictive models for decades. As the velocity of the world's data has accelerated, many are leveraging new sources and increased volumes to open additional revenue streams, offering their quantitative research expertise in the form of customized models and insights to clients. In this new era, bringing transparency into the modeling process and facilitating rapid development and collaboration has become paramount.

Jacob Grotta, Managing Director at Moody's Analytics explains, "You can't rely solely on well-respected models anymore. You need to understand why that model is applicable for your use, its relevance against other models, how it was built, and its pros and cons. Transparency in the modeling process is critically important."

### Domino on AWS: Modern Data Science in a Conservative Industry

Data science workflows are ideally suited for the cloud, because they benefit from burst compute and specialized resources like GPUs. Domino Data Lab offers a centralized platform that helps IT management rein in the data science tools, assets, and infrastructure that are spread throughout many organizations today. Together, Domino on AWS provide a powerful data science platform for accelerating innovation while optimizing efficiencies, scalability, and security.

AWS' industry-leading security, flexibility, and availability make it the top cloud choice for most enterprises. And Domino provides a user interface (UI) for data science teams to run, build, deploy, and share models. Under the hood, Domino directly manages AWS resources (Amazon EC2, Amazon S3, etc.), either in a VPC or in a managed SaaS environment. Domino automates elastic compute resources, container orchestration, content revisions, and more, while letting IT monitor and control resource usage.

By allowing data scientists to use the latest and greatest modeling tools and languages and giving them the autonomy and collaborative capabilities to work fast, they will gladly adopt the data science platform instead of working in disparate local environments. IT systems and solutions built and used without explicit organizational approval (shadow IT) are minimized, and IT management benefits from the controls and transparency that are especially necessary in regulated industries.

### Domino on AWS Benefits Across the Enterprise

- **CIOs and IT management:** Centralizing data science infrastructure reduces shadow IT, better leverages cloud resources, and upholds the reproducibility of business-critical models.
- **Data scientists:** Providing open-access to best-of-breed tools and high-powered AWS compute, paired with faster, more collaborative experimentation with stakeholders across the organization, accelerates innovation.
- **Executives:** Reducing operational risk stemming from unmanaged data science efforts and delivering visibility ensures their investment in data science impacts the business.

#### Challenge

Data science teams often fail to fully utilize the power of the cloud, which is perfectly suited to their workflows that require scalable hardware and powerful GPUs.

#### Solution

Domino elegantly orchestrates AWS compute resources for data scientists so they can self-sufficiently spin up experimental environments, benefiting from the dynamic compute capabilities of the cloud, and AWS' industry-leading security, flexibility, and availability.

#### Results

The pace of innovation is accelerated through:

- Self-service compute infrastructure
- Streamlined model deployment
- Automatic governance and reproducibility
- Better, faster collaboration and knowledge management

## Case Study: Moody's Analytics

**MOODY'S**  
ANALYTICS

Moody's Analytics, a firm offering industry-leading data, models, software, and best practices for measuring and managing risk for more than 25 years recently implemented Domino on AWS. By accelerating its pace of model building, Moody's Analytics can:

- Easily and quickly interact with stakeholders across the business, shortening feedback loops, and delivering products to clients faster.
- Package "standard" models that can be tailored for customers, giving them direct access to those models for faster transfer of knowledge within Domino.

By standardizing its data science work on Domino on AWS, Moody's Analytics can see work that is happening in real time, and understand decisions that are made at any point in the development process.

As Jacob Grotta says, "A model is only useful if it's understood."

## Key Capabilities and Benefits

The Domino data science platform delivers:

- **Self-service infrastructure in AWS**, so data scientists can do exploratory data analysis and model development without configuring and using their own compute resources. Domino encompasses compute resources—as well as the languages, packages, and tools necessary for modern data science work—with controls and reporting around resource usage to administer or attribute costs. It will also automatically spin down an inactive environment to save utilization costs.
- **Multiple ways to deploy, produce, or operationalize** finished models, instead of driving data scientists to set up their own IT systems or go through arduous recoding processes with application engineers. This includes deploying models to power scheduled jobs, reports, APIs, or dashboards in one place. Domino also provides a consistent baseline of non-functional requirements such as security, high availability, and so on, and as a system of record for all data science activity, offers transparency into assets and utilization across the enterprise.
- **Governance, collaboration, and knowledge management** around all the artifacts created in the process of the research and deployment work described above.

## The Domino Data Lab Platform

Domino provides a central system of record that keeps track of all data science activity across an organization. Domino helps data scientists seamlessly orchestrate AWS hardware and software toolkits, increase flexibility and innovation, and maintain required IT controls and standards. Organizations can automatically keep track of all data, tools, experiments, results, discussion, and models, as well as dramatically scale data science investments and impact decision-making across divisions. The platform helps organizations work faster, deploy results sooner, scale rapidly, and reduce regulatory and operational risk.

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if it's understood."***

**– Jacob Grotta, Managing Director**  
Moody's Analytics

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## Delivering a Win-Win-Win for IT, Data Scientists, and the Business

The cloud is the future of enterprise infrastructure, and AWS is especially compelling for data science workflows. Too often, however, companies complete long initiatives to enable access to AWS infrastructure, only to find that data science teams can't take full advantage of all the benefits this new world can offer.

By implementing a Domino data science platform, CIOs, and IT management benefit from centralization and controls that make it easier to support data science while achieving regulatory compliance and optimizing spend. Data scientists have the freedom and flexibility to use the tools they want, access compute power when they need it, and collaborate with others in a fast-paced environment. Executives have more visibility into how data science is being used to power the business and the impact it is having. It's a win-win-win.

## About AWS

For 11 years, Amazon Web Services has been the world's most comprehensive and broadly adopted cloud platform. AWS offers over 100 fully featured services for compute, storage, databases, analytics, mobile, Internet of Things (IoT) and enterprise applications from 44 Availability Zones (AZs) across 16 geographic regions in the U.S., Australia, Brazil, China, Germany, Ireland, Japan, Korea, Singapore, and India. AWS services are trusted by more than a million active customers around the world – including the fastest growing startups, largest enterprises, and leading government agencies – to power their infrastructure, make them more agile, and lower costs. To learn more about AWS, visit <http://aws.amazon.com>.

## About Domino Data Lab

Domino Data Lab makes the leading Data Science Platform for the enterprise, helping organizations accelerate research, increase collaboration, and deploy predictive models faster. Founded in 2013 by three finance industry veterans, it's located in the heart of San Francisco, and serves companies ranging from small startups to Fortune 500 companies. To learn more about Domino Data Lab, visit: <https://www.dominodatalab.com/>