Domino for Research and Discovery

Accelerate Research and Innovation

Overview

Advanced algorithmic techniques will power the next generation of medical research, drug development, and patient care. These innovations will require massive computational power, the ability to process a wide variety of structured and unstructured data, and tight collaboration to build on previous work. Domino combines on-demand access to powerful infrastructure and modern data science tools and techniques, with unique collaboration and governance capabilities, to unlock life-changing medical breakthroughs.

Domino helps data scientists at the **world's largest health and life sciences organizations:**

- **Identify symptoms in patients** that can lead to chronic and infectious diseases
- **Determine the root cause of a disease** so the right patients can get the right treatment, at the right time
- **Predict patient response to therapy** using deep learning and other advanced AI and ML techniques

> "Domino has made it easier for users across the global enterprise, using different tools and with varied backgrounds and skill sets, to work with each other, leverage past work, and collaborate quickly. This ultimately results in more models being delivered and deployed in a shorter window of time, which is empowering Bayer to be a model-driven company."

NAVEEN SINGLA
Former Data Science Center of Excellence Lead

Why Health and Life Sciences Organizations Depend on Domino

Reproduce, review, and refine to drive breakthrough research

Domino automatically logs all aspects of model development and deployment so results are always fully reproducible. You can easily find and build upon past work, and teams can freely collaborate to test new ideas while maintaining best practices for governance.

Use preferred tools to maximize productivity

Domino supports a wide variety of open-source and commercial tools and languages, including Python, R, and SAS. As technology changes, easily add new tools so data scientists stay on the forefront of innovation.

Maximize business impact with increased model velocity

With Domino, data scientists can develop, deploy, monitor and manage models – all from a single platform. Models get into production faster with consistent deployment best practices to rapidly respond to business needs and increase impact.

Get more compute power on-demand

Domino provides self-service access to powerful and highly scalable infrastructure for the most computationally-intense R&D work. Add multi-node computing and GPUs with just a few clicks.

DOMINO

dominodatalab.com

The Benefits of Using Domino

Reproducible & Collaborative Research

Domino's powerful governance capabilities help you manage access to sensitive patient data to comply with company requirements and federal regulations. Data scientists can seamlessly collaborate with their internal peers as well as with external teams – sharing the results of experiments and iterating quickly to test new ideas. Senior leaders can track results and progress toward key milestones using either integrated project management capabilities or automatic synchronization with Jira, and retain institutional knowledge when key people leave so new data scientists can onboard quickly.

Open & Flexible Tools

Pre-configured environments provide self-service access to the latest tools and other open-source technologies, both on-premise and in the cloud. Powerful deep learning techniques and advanced biostatistical packages are easily incorporated, allowing teams to collaborate on a project using their preferred tools and languages, including Python, R, SAS, and MATLAB. This flexibility also minimizes the day-to-day provisioning and support requirements for IT teams, allowing them to focus on the integration of new open-source tools, packages, and libraries as they become available.

Rapid Experimentation & Deployment

Domino provides granular access control to data within the platform, as well as out-of-the-box connectivity to a wide variety of external data sources such as Amazon S3 or Redshift, Microsoft Azure, or Google Cloud. Data within Domino can also be shared between projects, without compromising control or having to make copies. Integrated workflows enforce consistent model deployment best practices so models can get into production faster and be automatically monitored for data drift, quality, and other model health indicators. When issues arise, data scientists can reproduce the original development environment to quickly re-train or re-build a model.

Highly Scalable Data Processing Power

Domino is able to handle massive volumes of structured and unstructured data, including histopathology images, with ease. Easy access to a wide variety of hardware tiers allow data scientists to quickly launch GPU-accelerated environments for deep learning and other intensive workloads. Support for the most popular distributed frameworks, including Spark, Ray, and Dask, enable highly elastic computational power on-demand without the typical time-consuming DevOps chores. Easily monitor usage and allocate resources based on the business benefit, workflow, and organization to manage costs and minimize waste.

Domino is the data science platform of choice for accelerating research and innovation at leading life science organizations worldwide and over **20% of the Fortune 100.**

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