



Chariot: Scalable MLOps for Dynamic Environments

Challenge

Models need to keep pace with a changing world while maintaining safety and security.

Organizations are struggling to see ROI on their analytics and AI/ML practice. The traditional approach of data professionals working on isolated platforms to build and deploy AI/ML models has failed repeatedly in dynamic environments where “yesterday” — when data is collected, and models are trained — looks nothing like “tomorrow” when models are used in the real world. This is “Day 3” problem:

- **Day 1:** Teams build and train ML models
- **Day 2:** Teams deploy those models
- **Day 3:** Analytics fail because the needs of the organization changes, accessibility to data changes, models drift, and human error creeps in. Data science teams live in a perpetual scramble to manage and update production models, which diminishes capacity and compromises quality.

Chariot

Manage your entire model lifecycle within a trusted, auditable, low-code experience.

Chariot is a cloud-native, highly scalable, no/low-code MLOps platform. It instantiates the data analytic process as code to make data science best practices the path of least resistance. It makes the process of machine learning and AI scalable, repeatable, and certifiable.

In production, Chariot’s integration of model monitoring and data lineage ensures an unbroken audit chain throughout the analytic process. Chariot’s API gateway enables rapid integration with customers’ production data systems, allowing user actions and behavior to automatically direct model management and remediation functions. The result is a Machine Learning Operations (MLOps) capability that allows users to customize and adapt workflows and analytics at the speed of dynamic operational requirements.

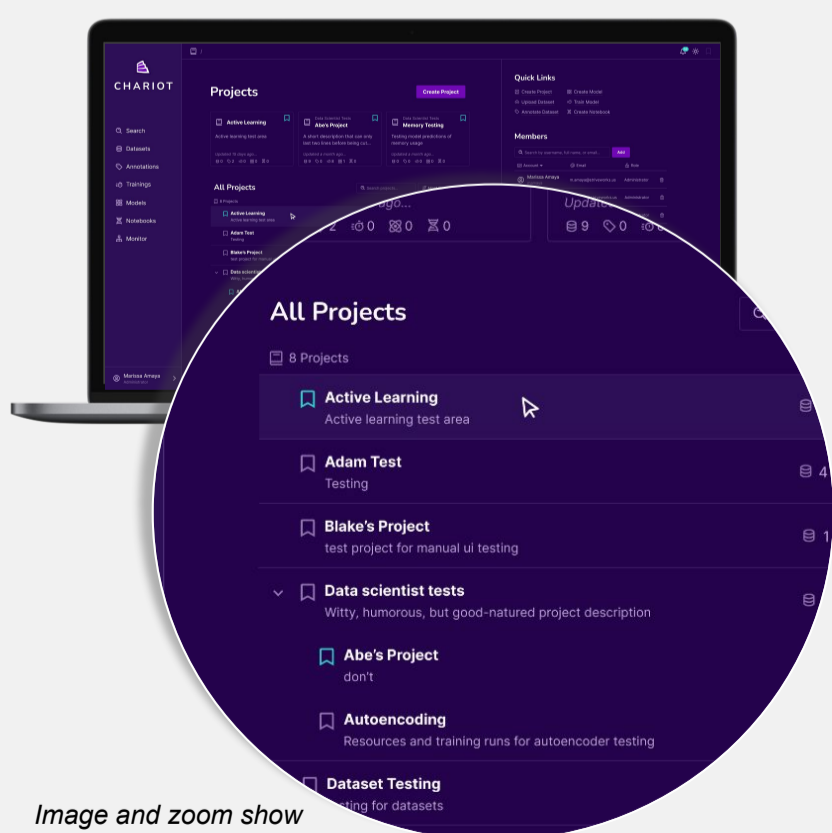


Image and zoom show Chariot platform projects page for collaborative model experimentation and management.

Benefits

Chariot is trusted by industry leaders to bring business experts and data practitioners together on a unified, self-serve analytics platform.

Analytics you and your regulators can trust

Chariot’s patent-pending data lineage provides full-spectrum auditability throughout the model lifecycle. Automated versioning of data, experimentation, and models provides explainability and reproducibility as models go into production. Chariot’s inference store gives you a complete picture of where, when, and how model outputs were used, whether programmatically or by users.

A platform for everyone

A no/low-code UI sitting on top of a full-featured SDK and set of CLI tools lets your entire team work on the platform in the way they need to self serve analytics. Collaboration centers like Chariot’s projects, dataset store, and model catalog enable multidisciplinary teams to come together to create data-driven outcomes.

MLOps where it really matters

Cloud-native doesn’t have to mean cloud-tethered. Deploy Chariot with confidence from the enterprise to the edge. Connect data sources, analytic, and visualization platforms through Chariot’s API gateway, enabling a plug-and-play monitoring, audit, and remediation experience for your mission-critical models.

Striveworks on AWS

Enhance your organization's AI/ML ability to self-serve ML capabilities with software from Striveworks, the leading experts in responsible MLOps for national security and other highly regulated spaces, and your trusted AWS partners. Striveworks' Chariot has proven deployments on unclass, secret, and top secret govcloud, and on-prem infrastructure. Using Chariot, you can bring the platform to the data.

As your organization scales its analytic capacity, the partnership between Striveworks and AWS is here to support that goal with the appropriate infrastructure management. Deploy Chariot to AWS EKS for a production-ready environment to gain value from Chariot's model development, deployment, monitoring and remediation. Manage cloud spend by leveraging EKS Autoscaling to ensure compute availability meets usage demand without gross excess.

Case Study:

Operational DoD Organization - Europe

»» Challenges

A large analyst team was tasked with manually analyzing satellite imagery based on a stream of constantly changing requirements. The manual identification was required to be completed within 15 minutes of image delivery to ensure its operational relevance. The analysis was a detail-intensive task of finding objects of interest in each visual frame. The shortened window to execute the task meant that not all objects of interest could be found before results were shipped.

»» Solution

Using Chariot, the customer was able to optimize their human capacity and rapidly produce models without the time and cost associated with traditional model procurement. Specifically, the team built a custom computer vision object detection models from a stream of inbound imagery that allowed them to automate the process of identifying objects of interest. Traditional MLOps capabilities failed to meet the accessibility and audit requirements to deploy models in this environment.

»» Results

In less than 6 months, the customer was able to train and put into production 4 custom object detection models that were trained using operationally relevant data.

With an automated and optimized workflow, the analyst team saw an 81% time savings from manual object identification activities.

Features

Model Monitoring & Remediation

Chariot's innovative features ensure that models are constantly monitored and can be quickly retrained when required. Semantic monitoring serves as an early warning against changes in model inputs, detecting if incoming data is no longer representative of the model training data for any reason, such as sensor changes or environmental factors. Combining this with the patent-pending Chariot Data Lineage, users can rapidly identify specific dataset versions to be either updated or augmented in order to return a model to performance standards.

Open Architecture

Chariot is built with an open architecture eventing system, microservices with open APIs, and it uses open-source standards for datastores and models. This architecture enables integrations at three levels that support scalability and productionizing models that fit mission-critical needs:

1. Platform-level integrations with GOTS or COTS intelligence and C2 programs
2. Service-level integrations for enhanced MLOps capabilities
3. Data or model import

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(www.striveworks.com) to
get a demo today.



Get started with Striveworks' solutions on AWS

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