



by Fosfor

# Empower Your Business to Scale AI, Not Ops

Fosfor Refract is an enterprise AI platform that accelerates and automates your entire data science, Artificial Intelligence (AI), and Machine Learning (ML) life cycle, from data discovery to modeling to deployment to monitoring. Refract provides an abstraction of ML DevOps, which allows data scientists to focus on AI model development, without having to worry about operationalizing the models. The platform provides containerized and reproducible notebooks/toolkits, which help build complex models and monitor the performance of data.

## How does Refract create value?



Reduces typical data preparation time by over 90%



Reduces time-to-delivery for ML projects up to 50%



Increases data scientists' productivity up to 400%



Typically reduces required number of ML engineers by 75%



Typically reduces AI infrastructure costs up to 50%



Ensures 2 times faster ML operationalization

## Key features of Refract



### Assisted data preparation

Refract ensures AI-led data discovery, and ML-assisted data wrangling, data quality, and data preparation.

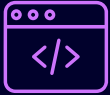
- **Intuitive wrangling:** Easy data wrangling with a simple no-code and intuitive interface
- **Prebuilt data processing steps:** Extensive library for processing all structured, semi, and unstructured data
- **Data profiling:** Auto schema and data format detection, with a quick view of data at every step of wrangling
- **Assisted data quality:** Data quality indicators, metrics, and intelligent recommendations for potential data enrichment at each step
- **Functions library:** Robust library of over 200 pre-built functions



### Auto-insights

The platform provides AI-led insights, patterns, and machine reasoning to identify the right-fit ML algorithm for solutions.

- **Automated ML development module:** Identify the right-fit algorithm for the solutions implemented
- **Building and optimizing visual ML/AI:** A UI-based design and ML workspace with a centrally managed enterprise platform
- **Autonomous insights generation:** Rapidly uncover patterns, segments, advanced profiles, intelligent data types, anomalies, and insights across data
- **Outliers and anomalies:** Automatically discovered within the data
- **Machine reasoning in natural language:** Leverage narrative engines to interpret the findings in the data and provide natural language explanations
- **What-if simulations:** Simulate multiple scenarios to decide the next best business actions



## Model development

Refract helps data scientist teams to work together with a customized notebook on a containerized and scalable development workbench.

- **Data connection library:** Collate data from varied sources using connector libraries
- **Personalized notebooks:** Notebooks with prebuilt ML libraries and customized with a choice of libraries or custom code
- **Containerized notebooks:** Build notebooks with configured container size, which allow the client to allocate resources dynamically upon initiation
- **Share notebooks across developers:** Collaborate by sharing customized images, and registered models and services
- **Multiple model development options:** Enable model creation on RStudio, Apache Spark, VSCode, Jupyterlab, and others, besides the toolkits used earlier - Jupyter and Zeppelin



## Model registry

The platform allows organizations to create a centralized model registry and ensure version control with configurable cluster execution on hybrid and scalable infrastructure.

- **Model registry:** Register ML/AI models using a graphic user interface, or from notebooks using prebuilt libraries
- **Bring Your Own Code (BYOC) and register:** Register models built outside the platform using prebuilt integrated Refract libraries
- **Lineage and versioning:** Manage multiple trained models in one place, with different versions, along with their training logs and summary



## Model deployment

The platform is a one-stop-shop for batch near real-time and real-time deployments.

- **Integrated library to package and deploy models:** Provide Refract libraries integrated within notebooks to package and deploy any model-as-a-web-service
- **Hybrid deployment:** Offer deployment services to package, and deploy any model version on highly scalable and secure environments
- **Change management:** Manage all versions of registered and deployed models on the platform
- **Secure and scalable API:** Allow trained models to be registered, packaged, and deployed as web services on K8s clusters
- **Consumption management:** Manage model instrumentation/metric link invocation, accuracy, version, AB, and scoring



## Model monitoring

Refract allows model instruments to depict usage and health check metrics.

- **Data drift and concept drift:** Automatically monitor the changes on the incoming data being served by the model through various advanced statistical techniques
- **Auto alert:** Automatically receive alerts if the desired threshold is breached, which can help retrain models proactively
- **Monitoring usage:** Continuously monitor the model usage and the traffic the model is generating
- **Monitoring tech:** All the technical aspects of the model, such as resource usage and logs, are centrally stored, and analyzed for solving technical issues around the model



## Model interpretability

Explain the black-box ML models for better adoption using AI.

- **Explainable AI:** Dashboards that are explainable allow users to understand black-box ML models
- **Data and catalog:** Discovery engine with faceted search to explore data

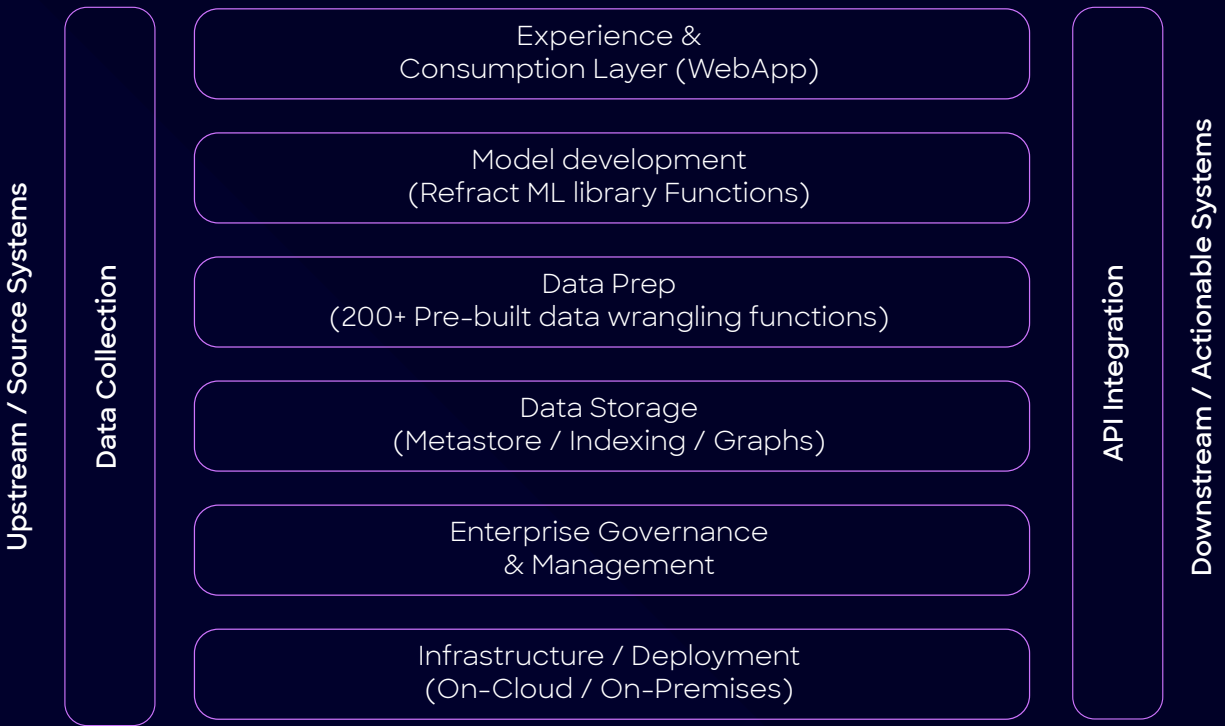


## Governance and security

Refract offers enterprise governance and security integration.

- **Set up and manage a hybrid environment:** Install the framework on a K8s cluster onto any cloud or on-premise infrastructure
- **GPU support:** Execute and train deep learning models using GPU cores and hardware
- **Auto-scaling:** Models registered on the platform are deployed on highly scalable K8s clusters
- **Model access:** Fine-grained access control on models and integration with enterprise LDAP/AD to manage users, user groups, user attributes, roles, and actions
- **GIT integration:** Capture every change and code version to GIT, allowing users to revisit version history, or access previous versions as needed
- **Visibility of model lineage:** Automatic tracking of ML lifecycle allows users to track and have complete visibility across ML/AI model portfolios

# Product Architecture



## Deployment Options

Flexibly deploy on cloud or on-premises



The Fosfor Product Suite is the only end-to-end suite for optimizing all aspects of the data-to-decisions lifecycle. Fosfor helps you make better decisions, ensuring you have the right data in more hands in the fastest time possible. The Fosfor Product Suite is made up of Spectra, a comprehensive DataOps platform; Optic, a data fabric to facilitate data discovery-to-consumption journeys; Refract, a Data Science and MLOps platform; Aspect, a no-code unstructured data processing platform; and Lumin, an augmented analytics platform. Taken together, the Fosfor suite helps businesses discover the hidden value in their data. The Fosfor Data Products Unit is part of LTI, a global technology consulting and digital solutions company with hundreds of clients and operations in 31 countries. For more information, visit [Fosfor.com](https://Fosfor.com).