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Data Science Platform (eDSP)

Accelerate processes, reduce
costs and boost capacity

AGENDA

01

Problems that eDSP solves

02

Business value

03

Product overview

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Case study

01

Problems that eDSP solves

PROBLEM 1: DATA SCIENTISTS AND DEV OPS ARE SCARCE RESOURCES

You know your desired goals but lack the specialists to achieve them



Data scientists create several models



Ready-to-use secure API
Dashboards and statistics
Monitoring and model management
Straightforward change-making

SOLUTION: ELEKS DATA SCIENCE PLATFORM

Handles security, deployment, scaling and more. Less time of DevOps and Data Scientists needed



ELEKS DATA SCIENCE PLATFORM

Purpose

To automate machine learning model management

To accelerate delivery of analytics

To reduce the costs

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containerization

scalability



02

Business value

ELEKS DATA SCIENCE PLATFORM

Business value

Key benefits
of integrating
ELEKS Data
Science into
customers'
ecosystem:

01

Process acceleration

- Customers' prepare the model code and data source.
- ELEKS' Data Science Platform handles the rest.
- View all data on a simple dashboard—within hours.

02

Cost-efficiency

- No need for a large DevOps team to maintain your models.
- No additional developers needed to improve model scoring and security.
- Smarter use of cluster resources

03

Higher capacity

- Data scientists can focus on building new models—leaving serving, security, deployment, scaling, scoring, and retraining to ELEKS' Data Science Platform.



CUSTOMER BENEFITS

Significantly lower costs and model support complexity.

Process improvement

Reduced burden of operational tasks for data scientists.

Rapid failure detection with out-of-the-box monitoring.

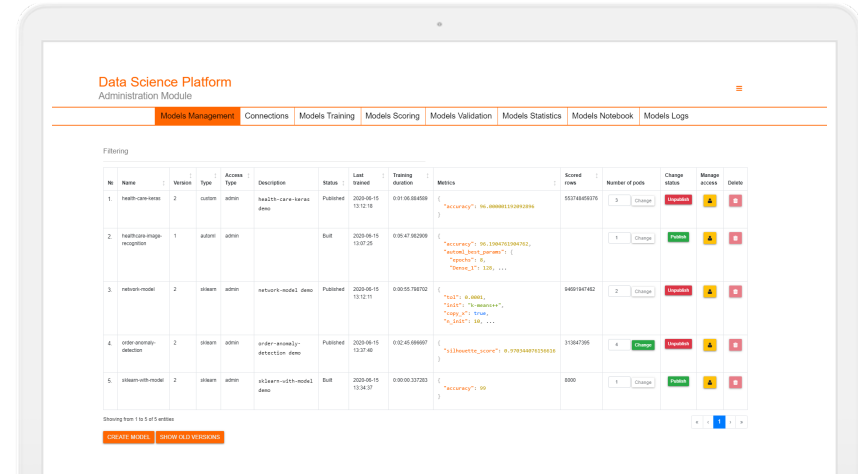
Ability to create machine learning models via AutoML – even with no prior data science expertise.

Managing all data science models from one place, with significantly less effort.

Up to
2x
faster delivery
time

Up to
40%
cost savings

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The screenshot displays the 'Data Science Platform Administration Module' interface. At the top, there are navigation tabs: 'Models Management' (active), 'Connections', 'Models Training', 'Models Scoring', 'Models Validation', 'Models Statistics', 'Models Notebook', and 'Models Logs'. Below the tabs is a 'Filtering' section. The main content is a table with the following columns: 'Id', 'Name', 'Version', 'Type', 'Access Type', 'Description', 'Status', 'Last Updated', 'Training Duration', 'Metrics', 'Score Time', 'Number of jobs', 'Change Index', 'Manage Access', and 'Delete'. The table contains five rows of model data.

Id	Name	Version	Type	Access Type	Description	Status	Last Updated	Training Duration	Metrics	Score Time	Number of jobs	Change Index	Manage Access	Delete	
1	health-care-1	2	outlier	admin	health-care-karua demo	Published	2020-06-15 13:12:18	0:01:00.684008	{ "accuracy": 96.46666666666667 }	5774665270	1	Change	Disable	A	B
2	health-care-2	1	admin	admin		Build	2020-06-15 13:07:26	0:05:47.862036	{ "accuracy": 96.33847633476335, "recall": 96.33847633476335, "precision": 96.33847633476335, "f1_score": 96.33847633476335 }		1	Change	Disable	A	B
3	network-1	2	admin	admin	network-model demo	Published	2020-06-15 13:12:19	0:00:55.782702	{ "f1": 0.9999, "recall": 0.9999, "precision": 0.9999, "f1_score": 0.9999 }	8469184742	2	Change	Disable	A	B
4	order-anomaly-detection	2	admin	admin	order-anomaly-detection demo	Published	2020-06-15 13:37:46	0:02:46.696607	{ "f1_score": 96.33847633476335 }	315847396	1	Change	Disable	A	B
5	sklearn-voting-model	2	admin	admin	sklearn-voting-model demo	Build	2020-06-15 13:34:37	0:00:00.317023	{ "accuracy": 99 }	8000	1	Change	Disable	A	B

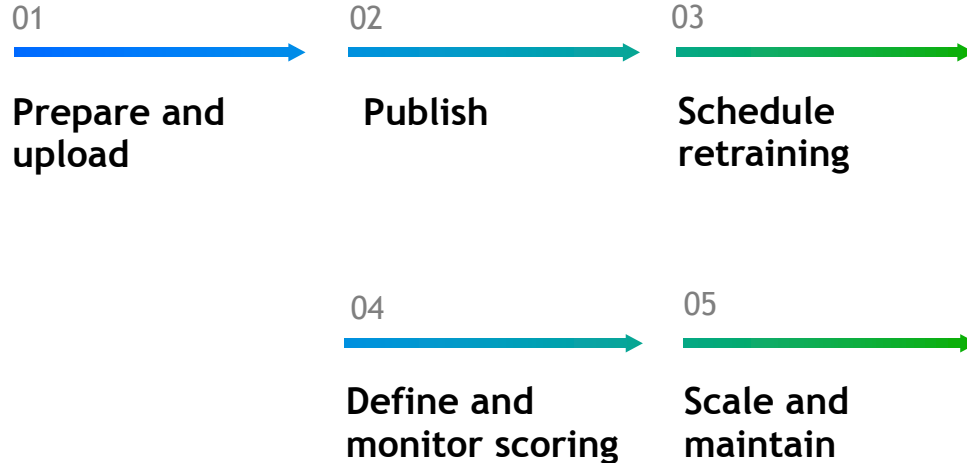
Showing from 1 to 5 of 5 entries

[CREATE MODEL](#) [SHOW OLD VERSIONS](#)

03

Product overview

SIMPLIFYING THE PROCESS OF WORKING WITH MODELS IN PRODUCTION



ELEKS DATA SCIENCE PLATFORM

Features for the team

Benefits for
the following
key players:

01

DevOps

- Automated infrastructure deployment—including Kubernetes and configured persistent storage.
- CLI for deployment.
- Built-in cluster monitoring dashboards.

02

Data scientist

- Less time spent on serving.
- Secure model communication.
- Simple manual and scheduled retraining.
- On-the-fly model updates.
- No need for custom connectors to load training data.
- Automated scoring: models can exchange requests with other authorized models.

03

Analyst

- Preconfigured model monitoring & dashboards
- Ability to view and create custom dashboards.
- Ability to create simple models with AutoML and monitor the results.

FEATURES FOR THE PROJECT

Deployment

Separate Docker containers for models

Code updates without redeployment

API generation

Management

Retrain scheduling

Model scoring and training scalability

Model version restoration

Monitoring

Cluster state, CPU and memory usage

Model output and alerts visualization

Model metrics in the platform UI

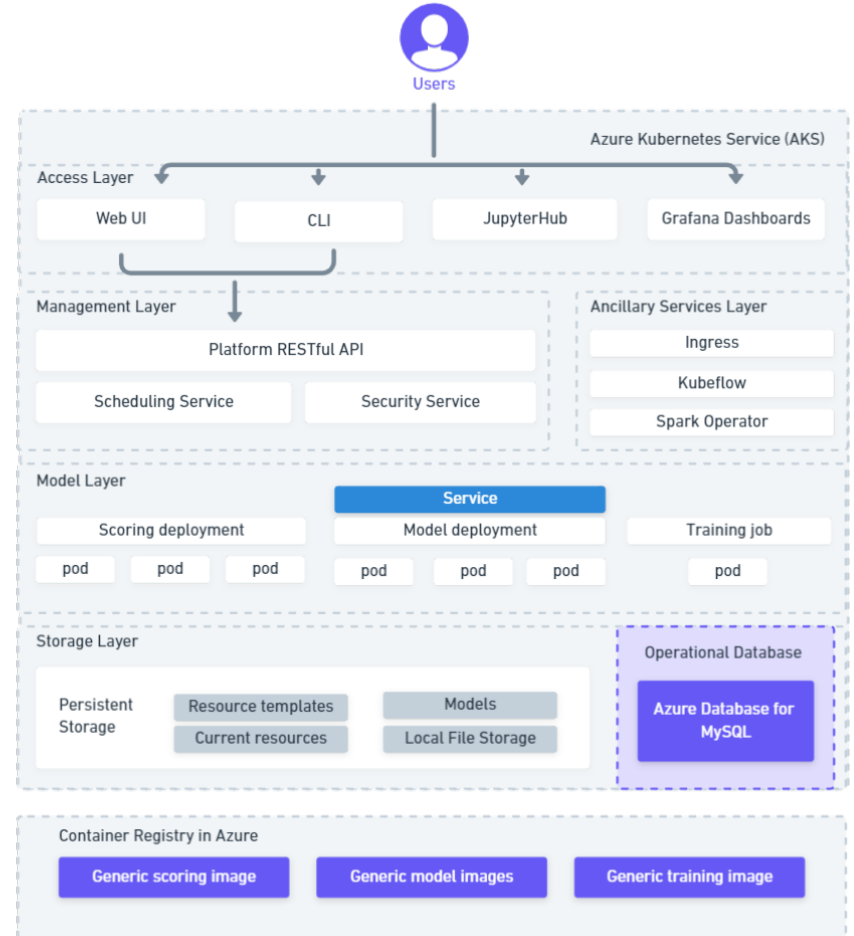
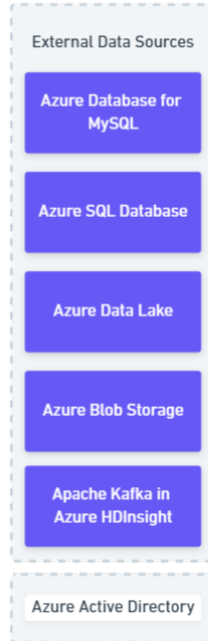
Integration & security

Data source integration

Restricted access to all resources and dashboards

ELEKS' DATA SCIENCE PLATFORM ARCHITECTURE (ON AZURE)

- Access platform functionality through a web interface, CLI, and back-end RESTful API.
- When you publish a new model, create a new score or start training, a back-end request is sent to Kube API, and a respective generic image is extracted from the Image Registry.
- Data sources are consumed through scorings. Scorings are containerized Scala applications that extract data, feed it to the models then receive and store the responses.



04

Case study

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CASE STUDY

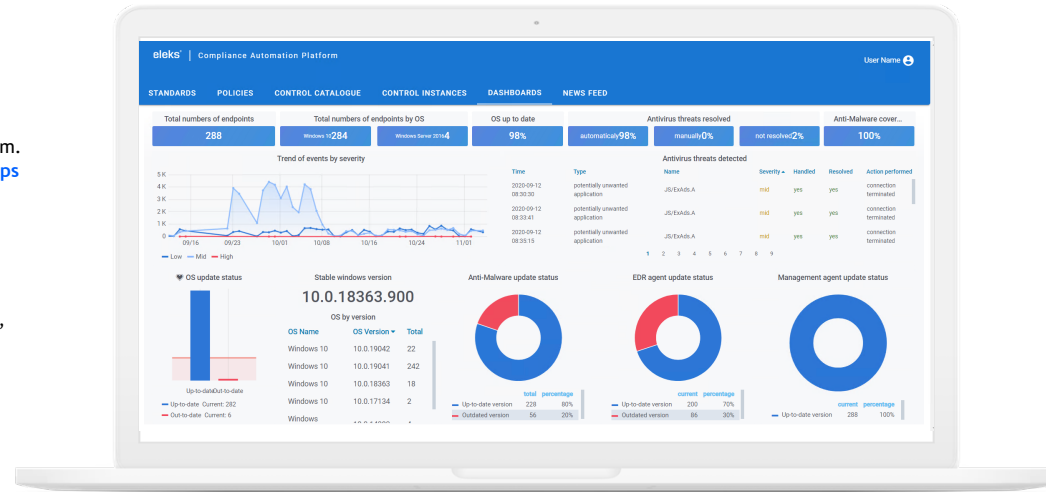
COMPLIANCE AUTOMATION PLATFORM

CHALLENGE

Coordinating all your organization's compliance efforts and minimizing the total cost of compliance management.

SOLUTION

- Tailor ELEKS' Compliance Automation Platform (eCAP) to your data science platform. eCAP - advanced GRC tool that **analyzes the controls** in your organization and **maps** them against relevant **regulatory requirements**.
- eCAP uses **advanced data science** to reduce the cost and burden of compliance. Data science models are deployed to the eDSP, e.g. a model that indicates anomalies in security event logs, regulatory news classification models, etc.
- Enable **real-time analytics**, alerts, and anomaly detection. **Monitor** your **controls**, based on the data from logs, reports, apps, and more.
- Receive easy-to-follow data visualization and reporting. Reports allow you to **estimate** your current **level of compliance** and identify potential areas of improvement.
- **Speed up** the implementation of new and updated **legislation** by generating almost instant “map and gap” analysis.
- Collect **regulatory updates**, **manage requirements**, **generate policies** and controls, **support** internal and external **audits** and many more with eCAP.



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