

The Enterprise AI Company

# GRACE

AI PLATFORM

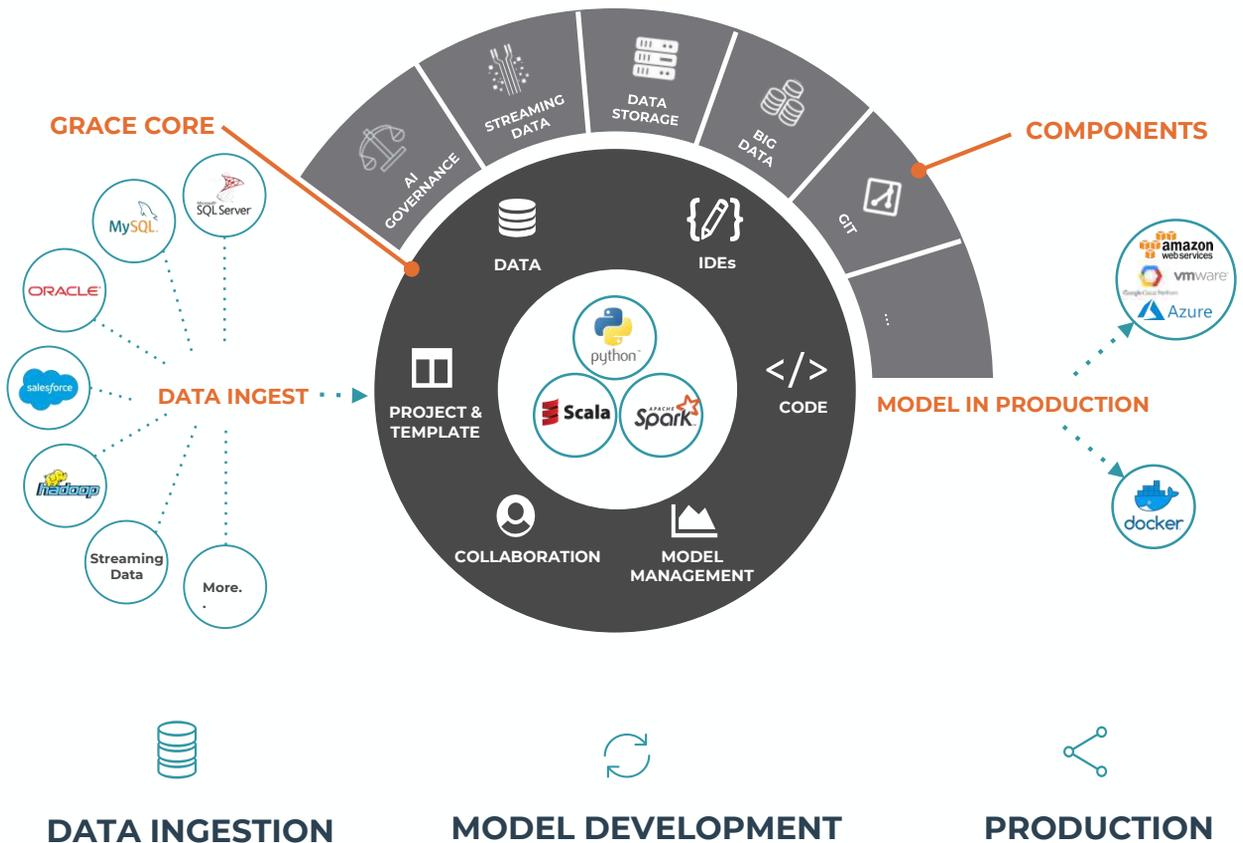
**“An AI platform basically lowers the barrier of entry and enables fewer engineers to reinvent less, allowing them to focus on implementing the AI that is specific to the business”**



Board member  
Danny Lange

# Grace

## Technology core and components

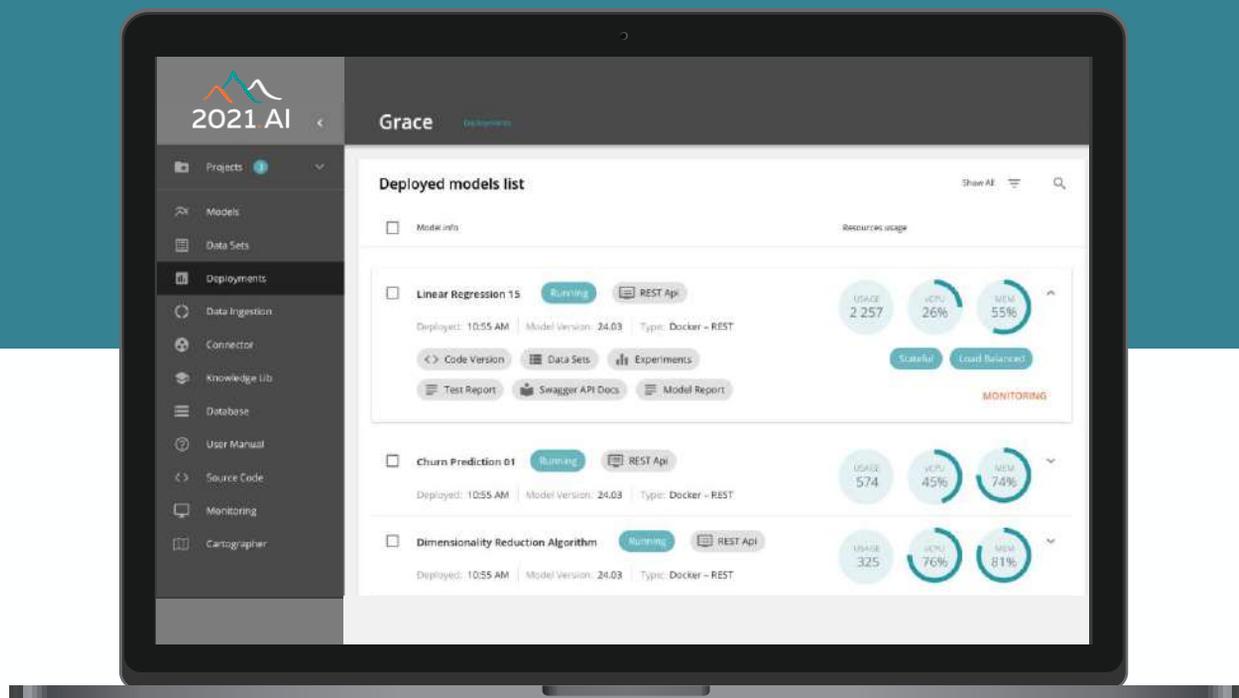


The Grace AI Platform offers clients with in-house data science teams an enterprise AI solution to support and enhance team productivity and efficiency, as it standardizes processes and workflows across the data science functions.

The Grace AI Platform offers clients without in-house data science teams a fully functional AI solution, where the full AI life cycle can be run as a Managed Service from 2021.AI. Enabling organizations of all sizes to embark on the AI journey.

# Meet Grace

The AI platform for adding clear and measurable value with data science



## Productionize AI at scale

It is only in production that AI adds clear and measurable value. Only by implementing AI across the enterprise and at scale, will organizations be competitive for the next decade.

Grace standardizes processes and workflows across such areas as data ingestion, model training, deployment, model lifecycle functionality, model monitoring, and retraining.

Grace provides organizations with the most comprehensive AI Governance, including monitoring and surveillance as well as traceability, explainability and other compliance options.

# Grace AI Platform



## **EFFICIENT AND PRODUCTIVE**

Standardizing processes and improving workflows in the data science functions for organizations seeking to implement AI.



## **FLEXIBLE**

Full flexibility to freely install new libraries, and the choice to work with individually preferred data science tools, is most often a key prerequisite for ambitious data scientists of today.



## **VENDOR INDEPENDENT**

Vendor neutrality: supporting Microsoft Azure, Google Cloud Platform, Amazon Web Services, as well as on-premise installations and hybrid options.



## **SECURE**

Focused on compliance and GDPR, supporting all the necessary InfoSec and IT security features as required in most organizations. Offering organizations to apply their own security and privacy features.



## **GOVERNANCE**

Ensuring that all activities are traced, explained, and enforced. This includes all areas within the data science model development, data used for model training and development, model bias and more.

# Functionality

## DEVOPS

- Deploy on Azure, Google Cloud, and AWS using Terraform and Vault, or on-premise
- User management using CLI and GUI
- Kubernetes for container management
- Horizontally scalable for AI development and models
- Compute resource management for individual AI projects
- Extensive model monitoring through API, model, and model test reports
- GPU support for training and model production
- Monthly releases incl.:
  - End-to-end DevOps testing cycles
  - Continuous integration updates with scripted tests
  - Continuous deployment cycles to various infrastructures with an opt-in/opt-out

## DATA SCIENTISTS

### DATA INGEST

- Data ingestion for data in motion or at rest, using standard databases (MySQL, MSSQL, Oracle, Cassandra, MongoDB, etc.) or SaaS data sources (salesforce.com, etc.)
- Data at rest in the platform using an in-house platform NoSQL database, graph database
- Ingest streaming data sources using Apache Nifi
- Build data catalogs through Nifi and HDFS/KNOX

### DATA SCIENCE CODE

- Work with Python, R, and Scala
- Remote workspaces, using Eclipse, PyCharm, Sublime Text, and many others, incl. SSH access
- Working with Jupyterlab Notebooks
- CRUD Kernels and work with different kernels in the platform and in individual projects
- Full support for versioning and collaboration on versioned code and data

### DATA SCIENCE MODELS

- Deploy models in a docker container and run them inside Grace, as well as outside
- Audit logs and data access
- Project-based sharing of data science code and data
- A curated list of libraries guaranteed to work with code, using automated testing
- Work with all the popular libs: Tensorflow, Keras, Scikit-learn, XGBoost, etc.
- End-to-end data science testing done at monthly release cycles
- Manage model experiments, as well as monitoring and comparing experiments
- Use and run Jupyterhub instances with custom amounts of vCPUs and memory
- In-platform Knowledge Repo for sharing data science code
- Setting up processes for model deployment
- Framework for enabling reproducible experiments and versioning datasets, code, and models
- Apache Spark and HDFS available in the platform for large datasets and distributed training runs

# Grace Standard Models

## Fast track to your first AI model implementation

With Grace Standard Models you have the foundation for scaling AI across your organization. Delivered on the [Grace AI Platform](#), clients with growing AI ambitions and interest in expanding to more bespoke and advanced AI model development will be well supported while adding more models as needs and requirements grow.



### PRE-BUILT PIPELINES

The Standard Models have pre-built data pipelines based on specific data structures, the only thing we need from you is your data.



### PRE-PACKAGED DATA SCIENCE EXPERTISE

Standard Models comes with the expertise from our multiple model implementation, pre-packaged to you for easy AI implementation.



### EASY IMPLEMENTATION

Standard Models are easily implemented in your IT infrastructure via Grace, and if requested smoothly integrated with your BI tools such as Qlik, PowerBI or Tableau.



CHURN PREDICTION



MESSAGE ROUTING



INTEREST PAYMENT PREDICTION



LEAD QUALIFICATION



INSURANCE CLAIM REJECTION



FRAUD PREDICTION



PRICE PREDICTION



TICKET SORTING

# BUILD OR BUY

## GRACE VS. DO-IT-YOURSELF

### PLATFORM DESIGN

Platform design is complex and demands both strong data science knowledge and deep enterprise technology expertise.

This includes areas like:

- The data science workflow and development processes, not to mention how multiple Data Scientists can collaborate on projects during the full model lifecycle management.
- Security, as your data science platform, must live up to security standards that effectively mitigate security concerns and risks.
- Ensuring compliance in a rapidly evolving regulatory environment, ensuring GDPR and other new legal requirements.

### TECHNOLOGY CHURN

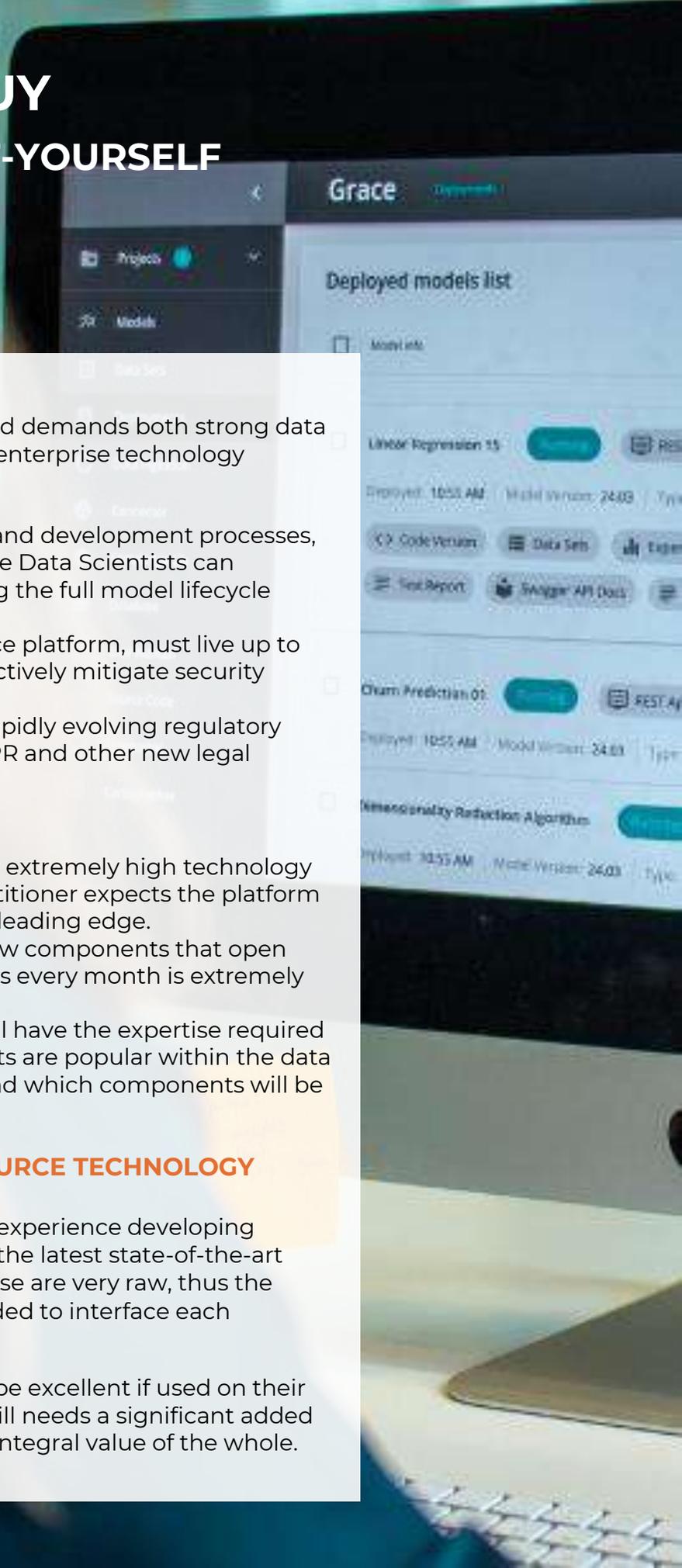
The AI field is characterized by extremely high technology churn, and a high caliber practitioner expects the platform to maintain its position at the leading edge.

- Monitoring thousands of new components that open source community produces every month is extremely time-consuming.
- Only a few organizations will have the expertise required to decide which components are popular within the data science community now, and which components will be the future standards.

### COMPLEXITY OF OPEN SOURCE TECHNOLOGY INTEGRATION

Few people in the world have experience developing enterprise solutions based on the latest state-of-the-art open source components. These are very raw, thus the proprietary development needed to interface each component is very complex.

While open-source tools may be excellent if used on their own, an enterprise platform still needs a significant added value on top to represent the integral value of the whole.



## SUPPORTABILITY

Building a support team with profound knowledge within data science is costly. The integration of monitoring components and building processes around support requires highly skilled talent and time. The telemetric and backstopping functional area is perhaps one of the key aspects of Grace which demonstrates that it is designed to encourage and facilitate growth in the data science function.

In a nutshell, the Grace platform's purpose is to constitute a good technological foundation to conduct data science. The platform supports bridging your data science function and 2021.AI's Data Scientists and infrastructure experts at the client's discretion only.

This access to experienced technical resources takes place on two primary levels:

- The data science level
- The infrastructure, technical operations, and governance level.
- Similarly, client-side Data Scientists will be able to reach out to members of the 2021.AI's data science team to access sparring, guidance, and consultation. Should a client wish to outsource an entire model development task to the 2021.AI upstream resources, this option is also available.

## TESTABILITY

It is extremely important that all functional and non-functional aspects of an enterprise platform are properly and continuously tested.

- Building enough test cases to test all functional areas of the platform
- Making sure that custom-developed data science code and data science experiments can run on the platform after upgrading
- Making sure that data science libraries work together with different versions and in different configurations
- Making sure that platform scalability and security is actually tested

These are time and expertise in consuming activities that few organizations have the capacity and willingness to do in-house.



## **The Enterprise AI Company**

2021.AI serves the growing need for applied AI. Our data science expertise combined with our Grace AI Platform offers a true AI differentiator for clients around the world. With Grace, Data Scientists can solve some of the most complex problems, or directly implement our packaged models related to churn prediction, chat-bots, classification, and much more. Growing fast with more than 80 employees, 2021.AI is headquartered in Copenhagen with sales and R&D in several locations globally.